

**Plant and equipment minimum standards**

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## Plant and equipment minimum standards

### 1. Introduction

#### Objective

To provide a consistent standard of plant safety across all Morgan Sindall controlled projects.

This document is to be used in conjunction with project specific vehicle and plant management plans and is subject to on-going improvement as new technologies are developed.

This document is also supported by SH9 STD4 Compact Plant Standard which gives further guidance regarding use of compact plant on Morgan Sindall controlled projects.

Compact plant document covers the following items of plant; compaction rollers below 1000mm drum width, mini excavators below three tonne, dumpers below two tonne, skid steer loaders, and ride on mowers and All-Terrain Vehicles (ATV).

#### Minimum standards

This section sets out the minimum standards for plant, tools and the operator / driver for both Magnor Plant assets and those supplied through our central Plant Hire Desk in order to achieve best practice.

Special consideration may need to be given for plant and equipment, operating in London, regarding latest emission engine requirements.

#### Engine emissions

- For non-road mobile plant this is Stage 5 engine emissions in the London Central Activity Zone and Stage 4 engine emissions for everywhere else.
- Some cities may introduce the Stage 5 engine emissions requirement in their air quality standards. For further details, see appendix C of; [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/672406/E31 - Air Quality v1.5.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672406/E31_-_Air_Quality_v1.5.pdf)
- For more details regarding this legislation and clarification on what equipment falls into scope please consult [www.nrmm.london](http://www.nrmm.london)

In respect of plant and equipment used by our supply chain partners, the minimum standards will form part of our expected standards and in some cases, transitional action plans may have to be put in place, to achieve the Morgan Sindall minimum standards.

A summary poster can be found in appendix 2.

All mobile plant needs to incorporate the “thumbs Up” livery.

Toolbox Talks (TBT's) / guidance needs to be completed at all sites demonstrating the concept and best practice relating to “thumbs up” is embedded at all site locations.

For road vehicles covered by this Standard, content of the Traffic Signs Manual Chapter 8 Part 2 (Chapter 8), to be adopted, as follows:

- Roof-mounted beacons – in accordance with the Chapter 8, Clause O5.3, that includes;
  - Any vehicle stopping on the highway for works purposes or inspections shall be equipped with either a roof-mounted flashing amber warning light bar (comprising at least two independent light sources) or two independent roof-mounted flashing amber warning beacons, visible through 360°
  - Roof-mounted flashing amber warning beacons must comply with the requirements of the Road Vehicle Lighting Regulations and should also comply with the United Nations Economic Commission for Europe (UNECE) Regulation 65 on Special Warning Lamps.
  - If the main roof-mounted beacon is likely to be obscured from the rear by parts of the vehicle or any equipment carried on the vehicle, additional beacons should be fitted toward the rear of the vehicle where they will remain visible.
  - The roof-mounted beacons shall be in use when entering, leaving or moving within the site, when travelling in traffic at less than the general traffic speed, and when stationary on the hard shoulder
  - When stationary within the confines of a fully installed traffic management arrangement, the roof-mounted beacons shall be switched off, unless they form part of the guarding of the works, e.g. works on minor roads, or are required for mobile works
  - Vehicles engaged in work activities shall display a flashing amber warning beacon at all times when operating
- Vehicle conspicuity –
  - Road vehicles fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.

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- Highway maintenance sign –
  - The sign “HIGHWAY MAINTENANCE” to diagram 7404, with 140mm capital letter height, fitted externally on rear of each vehicle, in accordance with Chapter 8, clause O5.5.3.

### Environmental protection

- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

This section lists requirements for plant and operators / drivers that may not apply to every situation, but is considered as applicable if possible.

### Hazards / risks

Significant hazards / risks are identified in this section however the use of plant on site will be subject to a full documented risk assessment.

### Legislation

There are references to legislation throughout the document however it is not intended to list all legislative requirements relating to plant operations.

For further information please refer to the following applicable legislation (note this is not exhaustive):

- Provision and Use of Work Equipment Regulations (PUWER)
- Lifting Operations and Lifting Equipment Regulations (LOLER)
- Work at height regulations
- Personal Protective Equipment (PPE) regulations
- Control Of Substances Hazardous to Health (COSHH) regulations
- Road vehicles (construction and use) regulations
- Construction plant and equipment (harmonisation of noise emission standards) regulations
- The control of noise at work regulations.

## 2. General plant

All non-operated plant must be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter.

### Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with European Commission (EC) Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Compliant with all current UK legislation
- On public highway – taxed, registered and insured, and compliant with road vehicles (Construction and Use regulations)
- Current 12 month LOLER thorough examination certificate
- 12 monthly thorough examination and six month thorough examination on lifting accessories and manual quick hitch
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible
- Flashing amber beacon
- Fire extinguisher in cab
- Seat belt or belts must be fitted and operational
- All road wheels to be fitted with wheel nut indicators
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm

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- Roll Over Protective Structure (ROPS) and Falling Objects Protective Structure (FOPS) to cab
- Safe Working Load (SWL) to be clearly marked on certified lifting points
- A machine specific lifting duty sheet, lift plan and risk assessment
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab [or] with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site defined-required PPE - non loose fitting PPE required in all cases to avoid catching on controls
- If quick hitch fitted:
  - Be briefed on safe use of quick hitches
  - Operator shall be trained in how to use specific quick hitch attachments
  - Daily inspection signed off
- If used for lifting:
  - Operator shall be trained in how to use excavator as a crane and specific lifting attachments
  - Lift plan to be briefed and understood
- A current CPCS card (or equivalent training scheme / card accepted by Morgan Sindall) for machine / equipment being used
- Competency assessment prior to being put to work – be familiar with machine
- Where the vehicle / plant requires the driver to hold a current valid driving licence to drive the plant on the public highway, the driver / operator must hold a current valid driving licence with the appropriate category for the vehicle / plant being utilised on site

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine: The following should be considered and briefed as appropriate:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles
- Transportation including loading / unloading
- Use of accessories and how they are attached / inspected such as breaking hammer
- Underground services
- Seat belts and ROPS not used
- Untrained operator
- Insufficient pedestrian / vehicle segregation
- Incorrect vehicle selection
- No banksman / untrained banksman
- Not following manufacturers operating instructions
- Lack of edge protection where vehicles are close to open excavations

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- Reversing blind spots.

**Note:** All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar activities and safety alerts.

### 3. Tools

#### General

All tools (petrol / diesel / air) must be inspected prior to first use and the appropriate pre-start check completed and daily inspections thereafter.

- Pre-use visual inspections must be completed
- Cables and connection fittings to be inspected prior to use.
- An original copy of manufacturers operating instructions / safety instructions
- Evidence of regular inspection plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible

#### Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-required PPE and or task specific- non loose fitting PPE required in all cases to avoid catching on controls
- Appropriate training and proof of that training for the tool / equipment being used, i.e. chainsaw.
- Competency assessment prior to being put to work – be familiar with the tool or equipment
- Operator understanding of stop start procedures
- Be familiar with HAVS monitoring requirements

#### Hazards / risks

Significant hazards / risks identified when operating the tool or equipment and for those adjacent to tool or equipment:

- Access for refueling and maintenance
- Clothes can get snagged / trapped in controls or guards
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances, such as fuels, oils and greases
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Use of accessories and how they are attached / inspected such as blades
- Correct procedure for fitting blades i.e. stihl saw
- Guards fitted and being used correctly
- Other work activities in the same area
- Emissions from material or work being undertaken
- Sparks
- Lack of appropriate PPE
- Lack of training / supervision
- Noise
- Hand Arm Vibration's (HAV's)
- Dust.

Note: All persons preparing risk assessments involving use of tools are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

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### 4. Petrol generator <10KVA

Petrol powered site generator with a maximum output of 10KVA.

#### General

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with European Commission (EC) Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- The use of these generators must comply with Health and Safety Executive (HSE) guidance "Electrical Safety on Construction Sites"
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See Integrated Management System (IMS)).
- Operator's instructions must be available on the machine
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- All safety decals in place and legible.
- Fire extinguisher available
- Isolation switch key for generators above 5KVA
- Electric start for generators above 5KVA
- Frame mounted up to 3KVA, Trolley mounted above 3KVA
- Switchable dual voltage (110v/230v) 32 and 16 amp outlet sockets protected by 30mA residual circuit breaker
- 110v outputs should be centre tapped to earth, the phase earth voltage should not exceed 63.5 volts
- Where the generator does not comply with the above an isolating tool transformer may be used in conjunction with the generator
- Non-armoured extension cables must not be used on voltages above 110v
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Operator

- Full induction attended prior to starting work
- Must have completed a product familiarisation briefing
- Pre-use (daily) inspection signed off and to be available
- Compliance with pre-use, daily and weekly defect reporting system
- Be signed on to appropriate safe systems of work documentation for the task
- Full site defined-required PPE and or task specific - non loose fitting PPE required in all cases to avoid catching on controls
- Abide by specific Morgan Sindall company policies, procedures and permits
- Always operator / use the equipment in accordance with manufacturer's instructions
- Ensure generator has adequate ventilation
- The Residual Current Device (RCD) operation should be checked before first use and after each time the generator is moved.

#### Desirable

- Additional fume extraction system
- Drip trays or plant nappy to be used in conjunction with the generator
- 110v only outlets or 230v outlets can be blanked off
- Trolley mounted

#### Hazards / risks

- Manual handling- heavy equipment
- Refuelling – possible fuel spillage
- Noise – hearing protection must be used as appropriate

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- Slips, trips and falls from trailing power leads
- Do not site the machine on uneven ground
- Do not refuel when engine is hot, running and do not overfill with fuel
- Electric shock.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 4.1 Diesel generators <20KVA

Diesel powered site generator with a maximum output of 20KVA.

#### General

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with European Commission (EC) Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- The use of these generators must comply with HSE guidance "Electrical Safety on Construction Sites"
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See Integrated Management System (IMS)).
- LOLER inspected central lifting eye if applicable
- Operator's instructions must be available on the machine
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- All safety decals in place and legible
- Fire extinguisher available
- 110v outputs should be centre tapped to earth, the phase earth voltage should not exceed 63.5 volts
- Where the generator does not comply with the above an isolating tool transformer may be used in conjunction with the generator
- Non-armoured extension cables must not be used on voltages above 110v
- Isolation switch with key
- Electric start
- Must have volt meter and hour meter
- Towing and lifting weight to be clearly displayed on generator
- 110v/240v, 64, 32 and 16 amp outlet sockets protected by 30mA residual circuit breaker
- When supplying items other than portable tools specific earthing requirements should be checked by a competent person
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Operator

- Full induction attended prior to starting work
- Must have completed a product familiarisation briefing
- Pre-use (daily) inspection signed off and to be available
- Compliance with pre-use, daily and weekly defect reporting system
- Be signed on to appropriate safe systems of work documentation for the task
- Full site defined-required PPE and or task specific - non loose fitting PPE required in all cases to avoid catching on controls
- Abide by specific Morgan Sindall company policies, procedures and permits
- Always operator / use the equipment in accordance with manufacturer's instructions
- Ensure generator has adequate ventilation
- The Residual Current Device (RCD) operation should be checked before first use and after each time the generator is moved.

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### Desirable

- Additional fume extraction system
- Drip trays or plant nappy to be used in conjunction with the generator
- Auto start system
- Hybrid / smart stored energy system
- Trailer or skid mounted

### Hazards / risks

- Manual handling - heavy equipment
- Refuelling – possible fuel spillage
- Noise – hearing protection must be used as appropriate
- Slips, trips and falls from trailing power leads
- Do not site the machine on uneven ground
- Do not refuel when engine is hot, running and do not overfill with fuel
- Electric shock.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 4.2 Diesel generators >20KVA

Diesel powered site generator with an output of 20KVA or above for large power distribution, either skid or trailer mounted.

### General

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with European Commission (EC) Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- The use of these generators must comply with HSE guidance “Electrical Safety on Construction Sites”
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See Integrated Management System (IMS)).
- LOLER inspected central lifting eye if applicable
- Operator's instructions must be available on the machine
- Evidence of pre-hire inspection, “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible.
- Fire extinguisher available
- 110v outputs should be centre tapped to earth, the phase earth voltage should not exceed 63.5 volts
- Where the generator does not comply with the above an isolating tool transformer may be used in conjunction with the generator
- Non-Armoured extension cables must not be used on voltages above 110v
- Isolation switch with key
- Electric start
- Must have volt meter and hour meter
- Towing and lifting weight to be clearly displayed on generator
- Silencing pack
- Emergency stop button
- Must have RCD or Residual Current Breaker with Over-current (RCBO) protection
- Engine protection shutdown system with warning lights
- Fuel level gauge
- 230v / 400v with 63 and 32 amp outlet sockets mounted on distribution board, protected by circuit breaker
- Voltmeter with phase to phase selector switch
- Automatic voltage regulator
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least

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disturbance. This may include the use of electric plant. Switch off plant when not in use.

- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Operator

- Full induction attended prior to starting work
- Must have completed a product familiarisation briefing
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Be signed on to appropriate safe systems of work documentation for the task
- Full site defined-required PPE and or task specific - non loose fitting PPE required in all cases to avoid catching on controls
- Abide by specific Morgan Sindall company policies, procedures and permits
- Always operator / use the equipment in accordance with manufacturer's instructions
- Ensure generator has adequate ventilation
- The Residual Current Device (RCD) operation should be checked before first use and after each time the generator is moved
- Must be qualified and competent to carry out electrical connection activities if installing generator
- Ensure access to the generator is restricted to authorised qualified persons only.

### Desirable

- Additional fume extraction system
- Drip trays or plant nappy to be used in conjunction with the generator
- Auto start system
- Hybrid / smart stored energy system
- Telematic system
- Programmable timer
- Remote start / stop function
- Bund level alert system
- Automatic refueling system from external fuel tank

### Hazards / risks

- Manual handling- heavy equipment
- Refuelling – possible fuel spillage
- Noise – hearing protection must be used as appropriate
- Slips, trips and falls from trailing power leads
- Do not site the machine on uneven ground
- Do not refuel when engine is hot, running and do not overfill with fuel
- Electric shock.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 5. Towable equipment

### General / operator pre-use checks

- Pre-use / daily inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- 12 weekly inspection
- All towable compressors or air systems must come supplied road legal and fitted with integral fuel bunding for environmental protection
- Operator's instructions must be available
- Evidence of regular inspection, plus "next service and or inspection due" date sticker

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- All safety labels (decals) in place and legible
- All road wheels to be fitted with wheel nut indicators
- Checks on wheel nuts and wheel nut indicators
- All lighting towers must come supplied complete with mast deployment alarm and safety system
- Full wheel bearings inspected to be completed every 12 months (minimum)
- Tyre depth and condition
- Whip checks to be provided between hose and compressor and hose and tools
- Drawbar assembly breaking systems and towing eye
- Jockey leg / wheel
- Breakaway cable
- Lights
- Floor access and access ramp
- Equipment securing devices.

**Operator**

- Must be suitably trained in the use of towing equipment and for the host vehicle / item of plant
- Competency assessment prior to being put to work – be familiar with the towing equipment to be used

**Hazards / risks**

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Effect of weather visibility and working / traffic surfaces
- Hazardous substances such as fuels, oils and greases
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Access for moving, loading and maintenance
- Other work activities in the same area
- Use of accessories and how they are attached / inspected
- Overloading on axles
- Driver towing techniques
- Collision and towing at speeds
- Lack of training / supervision
- Incorrect securing of loads.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

**6. Excavator**

**General**

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter. Inspection sheet to be available in the cab and ideally visually displayed.

**6.1. 180° Excavator / loader (JCB3CX etc.)**

**Minimum requirement - Plant**

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- On public highway - taxed, registered and insured, and compliant with road vehicles (Construction and Use regulations)
- Current 12 month LOLER thorough examination certificate
- Operator’s instructions must be available on the machine
- Evidence of regular inspection, plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible

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- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake and dynamic brake efficiency test at maximum six monthly intervals
- Check valves must be fitted to excavators boom and dipper circuits
- External green light fitted to indicate when seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on public highways
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- ROPS and FOPS to cab
- Tooth guards must be used at all times when on public highway
- If wheeled duties use axle locks for other duties stabilisers must be deployed
- Isolation controls by a secondary device, such as seat rotation
- Maximum age eight years
- If quick hitch fitted:
  - Must be fully automatic double locking for machines over five tonnes (unless fixed as a direct attachment no quick hitch)
  - Have an in-cab warning alarm where quick hitch fitted
  - Copy of manufacturers operating instructions
  - Pre-use Inspection signed off
- Unless demonstrated that it will not be used for lifting:
  - Six month thorough examination on lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on certified lifting points
  - Audible or visual overload warning system fitted and operational
  - A machine specific lifting duty sheet, lift plan and risk assessment
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines' must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. slew restrictors, or banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required if outside cab - non loose fitting PPE required in all cases to avoid catching on controls
- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- If quick hitch fitted:
  - Be briefed on safe use of quick hitches
  - Operator shall be trained in how to use specific quick hitch attachments
  - Daily inspection signed off
- Construction Plant Competence Scheme (CPCS) card – category A10 (less than five tonne) or A12 (more than five tonne)

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## Plant and equipment minimum standards

- Competency assessment prior to being put to work – be familiar with machine
- Cat B car licence for road use
- Authorisation required prior to driving on public highway by site manager / contractor
- Operator to ensure buckets are carried safely at all times and secured safely when being transported
- If used for lifting:
  - Operator shall be trained in how to use excavator as a crane and specific lifting attachments
  - Lift plan and/or permit to lift must be briefed and understood

### Desirable - Plant

- 360° camera system that can pick up pedestrians at a maximum distance of five metres to a minimum zero in all directions
- Seat belt operation interlocked with ignition switch / warning indicator
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Complete people exclusion area around plant and operation
- A list of weights of potential items to be lifted should be maintained (lift plan)
- Use of slew restrictors where appropriate
- When using a lifting eye, a swivel hook should be considered to ensure load can be maneuvered without risk of swinging back or overloading
- Decals detailing tyre pressures and wheel nut torque settings.

### Desirable - Emissions

- Maximum machine age six years and compliant to Stage 4 or better engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Underground services
- Use of accessories and how they are attached / inspected such as breaking hammer

**Note:** All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar activities and safety alerts.

## 6.2. Mini excavator (up to and including machines eight tonne and below)

### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current 12 month LOLER thorough examination certificate

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## Plant and equipment minimum standards

- Operator's instructions must be available on the machine
- Evidence of regular inspection plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- Check valves must be fitted to excavators' boom and dipper rams for machines of five tonnes and above.
- External green light fitted to indicate when seatbelt is fastened
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- ROPS and FOPS to cab
- Tip Over Protection Structure (TOPS) to cab as minimum. It applies to compact excavators (as defined in ISO 6165) with swing type boom, having an operating mass of 1000 kg to 6000 kg.
- All buckets supplied with machines must come without teeth unless requested
- Extendable tracks for machines three tonnes and below
- Risk assessments to be completed to assess the largest / most stable machine possible to complete the task
- Maximum machine age five years
- If quick hitch fitted:
  - Must be fully automatic double locking for machines over five tonnes (unless fixed as a direct attachment no quick hitch)
  - Under five tonnes a manual quick hitch or direct attachment (pins)
  - Have an in-cab warning alarm where quick hitch fitted
  - Copy of manufacturers operating instructions
  - Pre-use Inspection signed off
- Unless demonstrated that it will not be used for lifting:
  - Six month thorough examination on lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on all certified lifting points
  - Audible or visual overload warning system fitted and operational
  - A machine specific lifting duty sheet, lift plan and risk assessment
  - When using a lifting eye, a swivel hook must be used to ensure load can be maneuvered without risk of swinging back or overloading. Short sling chain to be employed to stop side load
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. slew restrictors, banksman or track lock
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off if approached by others and keys removed from the cab for leaving machine unattended.
- Full site-defined PPE required if outside the cab - non loose fitting PPE required in all cases to avoid catching on controls
- Do not break ground unless briefed on, received and fully understood a permit to break ground
- If quick hitch fitted:
  - Be briefed on safe use of quick hitches

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## Plant and equipment minimum standards

- Operator shall be trained in how to use specific quick hitch attachments
- Daily inspection signed off
- CPCS card category A58A (less than ten tonne)
- Competency assessment prior to being put to work – be familiar with machine
- Operator to ensure buckets are carried safely at all times and secured safely when being transported
- If used for lifting:
  - Operator shall be trained in how to use excavator as a crane and specific lifting attachments (Note: A mini-excavator is only suitable for mechanical lifting/lowering, if check valves have been fitted to boom and dipper arm)
  - Lift plan and/or permit to lift must be briefed and understood

### Desirable - Plant

- Reversing alarm to be fitted working and audible at 10 metre in working conditions
- Reversing cameras on machines of eight tonnes and above
- Seat belt operation interlocked with ignition switch / warning indicator
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Complete people exclusion area around plant and operation
- When used for lifting a list of weights of potential items to be lifted should be maintained
- Use of slew restrictors where appropriate
- With quick hitch, an in-cab warning alarm for detachment

### Desirable - Emissions

- Maximum machine age five years and compliant to Stage 4 or better emissions (Stage 5 due in 2021)
- Electric engines available for 1.9T mini-excavators.

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Underground services
- Use of accessories and how they are attached / inspected such as breaking hammer

**Note:** All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 6.3. Tracked 360° excavator (all machines above eight tonne)

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned

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## Plant and equipment minimum standards

- Preventative Maintenance (PPM))
  - Current 12 month LOLER thorough examination certificate
  - Operator's instructions must be available on the machine
  - Evidence of regular inspection plus "next service and or inspection due" date sticker
  - All safety labels (decals) in place and legible
  - Fire extinguisher in cab
  - Seat belt must be fitted and operational
  - Flashing amber beacon
  - Check valves must be fitted to excavators boom and dipper circuits
  - External green light fitted to indicate when seatbelt is fastened
  - Mirrors to satisfy one metre high at one metre distance visibility criteria
  - Movement alarm fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged for a white noise alarm
  - 360° all round visibility aids (camera system) or 270° camera system to be fitted to all machines over eight tonne ([refer back to: Section 1 introduction](#))
  - ROPS and FOPS to cab
  - Work at height protection to provide safe work environment when on the machine for refuelling and maintenance etc.
  - Handrails on body where access is required
  - Maximum machine age five years
  - If quick hitch fitted:
    - Must be fully automatic double locking for machines over five tonnes (unless fixed as a direct attachment - no quick hitch)
    - Have an in-cab warning alarm
    - Copy of manufacturers operating instructions
    - Pre-use inspection signed off
  - Unless demonstrated that it will not be used for lifting:
    - Six month thorough examination on lifting accessories
    - Certified lifting point required for all lifting duties
    - SWL to be clearly marked on all lifting points
    - Audible or visual overload warning system fitted and operational
    - A machine specific lifting duty sheet, lift plan and risk assessment
    - If lift and carry duties to be undertaken specific risk assessment to be completed taking into account manufacturer's instructions
  - If used under overhead cables or obstructions:
    - Height restrictors with indication on machine
    - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
  - If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. slew restrictors, banksman or track lock
  - Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
  - Do not damage environmental protection measures i.e. fencing, water courses etc.
  - Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off if approached by others and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required if outside cab - non loose fitting PPE required in all cases to avoid catching on controls
- Do not break ground unless briefed on, have received and fully understood a permit to break ground

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## Plant and equipment minimum standards

- If quick hitch fitted:
  - Be briefed on 'safe use of quick hitches'
  - Operator shall be trained in how to use specific quick hitch attachments
  - Daily inspection signed off
- CPCS card – category A58a (less than 10 tonne) or A59a (more than 10 tonne)
- Competency assessment prior to being put to work – be familiar with machine
- Operator to ensure buckets are carried safely at all times and secured safely when being transported
- If used for lifting:
  - Operator shall be trained in how to use the excavator as a crane category for lifting operations is A58c (<10 tonne) or A59c (>10 tonne)
  - Operator shall be trained in how to use specific lifting attachments.
  - Lift plan and/or permit to lift must be briefed and understood

### Desirable - Plant

- All machines to come fitted with latest 360° camera technology, c/w pedestrian and machine interface capability, see note six on the Minimum Standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator
- Quarry specification light to indicate when seat belt worn. Some machines have also been wired such that the safety lever will not engage until seatbelt is connected
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Complete people exclusion area around plant and operation
- When used for lifting a list of weights of potential items to be lifted should be maintained
- Use of slew restrictors where appropriate
- Zero tail swing ballast / counterweight
- Handrails on body on thirteen tonne and above where access required
- Track direction indicator note
- Use of remote banksman cut off switch where appropriate

### Desirable - Emissions

- Maximum machine age five years and compliant to Stage 4 or better engine emissions (Stage 5 due in 2021)
- Hybrid engines available for 20T to 40T excavators.

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Underground services
- Use of accessories and how they are attached / inspected such as breaking hammer

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## Plant and equipment minimum standards

- Controls can be caught inadvertently if near to safety lever

**Note:** All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 6.4. Wheeled 360° excavator

#### a) (all machines nine tonne and above)

##### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- On public highway – taxed, registered and insured, and compliant with road vehicles (Construction and Use regulations)
- Current 12 month LOLER thorough examination certificate
- Operator’s instructions must be available on the machine
- Evidence of regular inspection plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake and dynamic brake efficiency test at maximum six monthly intervals
- Check valves must be fitted to excavators boom and dipper circuits
- External green light fitted to indicate when seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on public highways
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- 360° all round visibility aids (camera system) or 270° camera system to be fitted to all machines nine tonne and above (with the exception of JCB Hydrodig Machine) ([refer back to: Section 1 introduction](#))
- ROPS and FOPS to cab
- Work at height protection to provide safe work environment when on the machine for refuelling and maintenance etc.
- System to prevent operation at speeds in reverse
- Maximum machine age eight years
- If quick hitch fitted:
  - Must be fully automatic double locking for machines over five tonnes (unless direct attachment - no quick hitch)
  - Have an in-cab warning alarm
  - Copy of manufacturers operating instructions
  - Pre-use inspection signed off
- Unless demonstrated that it will not be used for lifting:
  - Six month thorough examination on lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on all certified lifting points
  - Audible or visual overload warning system fitted and operational
  - A machine specific lifting duty sheet, lift plan and risk assessment
  - If lift and carry duties to be undertaken specific risk assessment to be completed taking into account manufacturer’s instructions
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE’s GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. slew restrictors or banksman

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## Plant and equipment minimum standards

- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required if outside cab – non loose fitting PPE required in all cases to avoid catching on controls
- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- If quick hitch fitted:
  - Be briefed on safe use of quick hitches
  - Operator shall be trained in how to use specific quick hitch attachments
  - Daily inspection signed off
- CPCS card – category A58B (less than 10 tonne) or A59B (more than 10 tonne)
- Competency assessment prior to being put to work - be familiar with machine
- Cat B car licence for road use
- Authorisation required prior to driving on public highway by site manager / contractor
- Operator to ensure buckets are carried safely at all times and secured safely when being transported
- If wheeled duties use axle locks, for other duties stabilisers must be deployed
- If used for lifting:
  - Operator shall be trained in how to use the excavator as a crane category for lifting operations is A58c (<10 tonne) or A59c (>10 tonne)
  - Operator shall be trained in how to use specific lifting attachments
  - Lift plan and/or permit to lift must be briefed and understood

### Desirable - Plant

- All machines to come fitted with latest 360° camera technology, c/w pedestrian and machine interface capability, see note six on the Minimum Standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator
- Quarry specification light to indicate when seat belt worn. Some machines have also been wired such that the safety lever will not engage until seatbelt is connected
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Complete people exclusion area around plant and operation
- When used for lifting a list of weights of potential items to be lifted should be maintained
- Use of slew and height restrictors where appropriate, risk assessed
- When using lifting eye, a swivel hook should be considered to ensure load can be maneuvered without risk of swinging back or overloading
- Travel direction indicator
- Handrails on body 13 tonne and above where access required for refuelling or maintenance
- Use of remote banksman cut off switch where appropriate

### Desirable - Emissions

- Maximum machine age five years of age and compliant to Stage 4 or better engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance

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## Plant and equipment minimum standards

- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Underground services
- Use of accessories and how they are attached / inspected such as breaking hammer
- Operating in reversing mode

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 6.5. Plant accessories and attachments

This covers accessories manufactured by a different organisation to the host item of plant, examples include piling hammers, breakers etc. Where specific guidance exists e.g. with fully automatic quick hitches this should be prioritised before this document.

#### General

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Operator instructions must be available on the machine
- Evidence of pre-hire inspection, “next service and or inspection due” date sticker
- All safety decals in place and legible
- All accessories must be compatible with the host machine (weight, pressures, hydraulic flow etc.)
- All accessories should be installed and tested by a competent person, ideally from the supplying company
- All accessories must be designed for the purpose for which they are proposed to be used and for the item of plant and connection system to which they are to be connected
- Attachments must be supplied with manufacturer’s instructions for installation, operation and maintenance
- Compatibility must be checked for all attachments with quick hitches where applicable.

#### Operator

- Must be suitably trained and competent in the use of this type of equipment and for the host item of plant
- Ensure that the machine and ancillary equipment is operated in accordance with the manufacturer’s instructions and guidelines
- All hoses should be inspected regularly (daily, pre-use checks)

### Hazards / risks

Significant hazards / risks identified when using accessories or attachments and for those adjacent to accessories or attachments:

- Transportation including loading / unloading
- Entrapment between plant item and accessory
- Reduced visibility following the installation of accessory
- Accessories can increase instability in the host item, consideration must be given to ground conditions

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## Plant and equipment minimum standards

- Hydraulic hoses and cables can become trapped between moving parts, this may potentially cause a hydraulic oil spill if the hose bursts.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 7. Dumpers

#### General

**As of the 1 February 2020 Dual View dumpers procured through Morgan Sindall are to be mandated across all Morgan Sindall Infrastructure sites for machines six tonne and above.**

**All subcontractors owned assets (not machines obtained through the rental market) working on Morgan Sindall projects will have a six month transition period (1 August 2020) to transition all six tonne dumpers and above to Dual View models.**

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter. Dumpers and dump trucks must always be operated in accordance with manufacturer's instructions and shall not be filled above the safe load line inside the skip or above the metal rim, where no safe load line is indicated to avoid restricting driver's vision.

#### 7.1. Dual View dumpers six tonne and above / forward and side tipping dumper three tonne

##### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- On public highway - taxed, registered and insured, and compliant with road vehicles (Construction and Use regulations)
- Operator's instructions must be available on the machine
- Evidence of regular inspection plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake and dynamic brake efficiency test at maximum six monthly intervals where applicable
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by risk assessment for vehicle travelling on public highways
- Mirrors to satisfy visibility one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- ROPS and FOPS cab structure
- Selection of dumpers below six tonne must have a specific risk assessment prior to work to determine suitability for task. This must take account of the inclines and speeds at which they are to be used and any risk regarding visibility
- For all Dual View machines six tonne and above, rear collision avoidance system or camera (must be fitted with a warning system which alerts the driver to persons or obstructions within the immediate proximity of the rear of the vehicle, to ensure one metre high at one metre distance visibility criteria on dumpers
- For all three tonne standard Forward Tipping Dumpers front and rear collision avoidance systems must be fitted and operational
- Locking caps / covers
- Tow hitch (where permissible) must have correct pin with chain attached to dumper
- Tipping mechanism to be in good condition
- Maximum age six years

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## Plant and equipment minimum standards

- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed before leaving vehicle unattended.
- Full site-defined PPE - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A09A forward tipping wheeled, A09B – forward tipping tracked
- Operators operating Dual View dumpers must have attended full familiarisation training
- Competency assessment prior to being put to work – be familiar with machine
- Cat B car licence for road use (NB: drivers of dumpers over 3.5 tonnes Gross Vehicle Weight (GVW) must be 21 or over)
- Authorisation required prior to driving on public highway by site manager / contractor
- Do not tip whilst on the move or during high winds
- If towing required:
  - Be trained in towing and operational risk assessed
  - Register of persons authorised to tow must be maintained
  - Special care must be taken to weigh towed especially for breaking activities
  - Operator must consider stability issues when towing and the operator must refer to operators manual prior to towing

### Desirable - Plant

- Front and rear cameras to be fitted to all Dual View Dumpers six tonne and above.
- Seat belt operation interlocked with ignition switch / warning indicator
- Load measurement device
- Directional white noise reversing warning
- Complete people exclusion area around plant and operation
- A rule of thumb, 25 per cent of dumper capacity should be placed in a skip / discharge area prior to towing
- A three-way or side-tipping dumper must be three-way complete left or right or forward only. Diagonal tipping should be avoided as non-compliance can result in loss of stability

### Desirable - Emissions

- Maximum machine age six years and compliant to Stage 4 or better engine emissions Stage 5 (due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection
- Where turntable dumpers are narrow mouth, or high lift equipment, extra training must be given to the operator so that the dumper is used correctly

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases

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## Plant and equipment minimum standards

- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- High risk of overturning at speed and on inclines. Refer to manufacturer’s recommendations
- Falls / overturning into excavations
- All round visibility / loads restricting driver vision
- Wet materials / clay are prone to stick and cause instability during tipping.
- The buckets on side tipping dumpers can protrude significantly when turned to the side, creating a hazard to pedestrians
- Consider risk of towed items, such as roller

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 7.2. Articulated dump truck

Daily inspection records for plant to be completed. (Omni tag or similar systems must be displayed). A full induction must be attended prior to starting work and evidence of having signed on to the appropriate risk assessment for the task provided.

#### Minimum requirement - Plant

- Pre-use inspection signed off before each use (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Operator’s instructions must be available on the machine
- Evidence of regular inspection, plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- External green light fitted to indicate when seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on the public highways
- Mirrors to satisfy visibility one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- 360° all round visibility aids (cameras system) to be fitted ([refer back to: Section 1 introduction](#))
- ROPS cab structure. Cabs must have a minimum of two points of egress including one for emergency use; these must not be restricted in any way
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Articulation lock must be fitted and operational
- Mechanical prop fitted under body (for maintenance purposes only)
- No tailgates unless specifically requested and subject to risk assessment
- Locking doors with key to all cabs
- Maximum load capacity (payload) to be clearly marked
- Plant exceeding three metres in height must have a notice displayed in a prominent position in the cab showing the overall travelling height of the base machine, its load or equipment
- Must have a visual and/or audible warning when the body is in the raised position
- Tyres to be suitable for the ground conditions, have sufficient tread and be free from defects
- All Articulated Dump Trucks are to be fitted with Inclinometers
- If used under overhead cables or obstructions:
  - HSE’s GS6 avoidance of danger from overhead electric power lines must be followed
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.

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## Plant and equipment minimum standards

- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system.
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed before leaving the vehicle unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A56
- Competency assessment prior to being put to work – be familiar with machine
- The operator must stop work if any unauthorised / unsupervised personnel enter their immediate work area
- Ensure machine is operated in accordance with manufactures instructions and in accordance with their training
- Shall report all unsafe conditions
- Report defects and stop machine where defect is safety critical
- Body is not to be tipped while on the move
- All site and road speed limits must be briefed and complied with
- Operator to mount and dismount machine using fixed access arrangements and always facing the machine
- Be briefed on the site's plant and vehicle management procedures and check for overhead obstructions and hazards

### Desirable - Plant

- An external green light fitted to indicate when the seatbelt is fastened
- All machines to come fitted with the latest 360° camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.
- Sites are to be provided a suitable area where operators can conduct regular brake testing. It is recommended as a minimum that these tests are completed and recorded on a weekly basis
- Dump trucks can be supplied fitted with Ejector Bodies, therefore eliminating the need to tip on site. The Ejector Body offers clean load ejection and the capability to work in areas with restricted overhead clearance and soft underfoot conditions
- Site management to look at ways in which reversing distances can be reduced (Risk Assessment Method Statement (RAMS)). Tipping areas onsite need to be maintained to avoid unstable ground conditions and/or unnecessary slopes / inclines

### Desirable - Emissions

- Compliant to Stage 4 engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines

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## Plant and equipment minimum standards

- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- High risk of overturning at speed and on inclines. Refer to manufacturer's recommendations
- Falls / overturning into excavations
- Wet materials / clay are prone to stick and cause instability during tipping.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 7.3. Tracked dumpers (three tonne to 15 tonne)

These are self-propelled diesel powered, steel or rubber tracked, forward / rear / side tipping dumpers from three tonne to 15 tonne.

#### Minimum requirements - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Operator's instructions must be available on the machine
- Evidence of pre-hire inspection, plus "next service and or inspection due" date sticker
- All safety decals in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- External green light fitted to indicate when seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on the public highways
- Mirrors to ensure one metre high and one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- All machines supplied with reversing camera as a minimum, 11 tonne and above all machines to be supplied with full 360° camera system (refer back to: Section 1 introduction)
- ROPS and FOPS cab structure
- All access and egress points to be painted in high visibility yellow, ensuring three points of contact is achievable
- Mechanical prop fitted under body (for maintenance purposes only).
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system.
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed before leaving the vehicle unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A09 forward tipping tracked dumper
- Competency assessment prior to being put to work – be familiar with machine
- Operator must dismount machine using fixed access arrangements and always facing the machine using three points of contact at all times
- The operator must stop work if any unauthorised / unsupervised personnel enter their immediate work area.

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## Plant and equipment minimum standards

### Desirable - Plant

- An external green light fitted to indicate when the seatbelt is fastened
- 11 tonne machines and above to come fitted with latest 360° degree camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.
- Skip inclinometer in cab warning device
- Quarry spec light to indicate when seat belt worn (green beacon)
- Coloured seat belts to improve visibility

### Desirable - Emissions

- Compliant to Stage 4 or better engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Risk of overturning on inclines
- Stop blocks can be used to prevent falling in excavation
- Maintenance below skip hazardous, propping arrangements required
- Only to be used on gradients that are within the machines capability
- Load should be level with the skip.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 8. Cranes and lifting devices

### General

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter.

Inspection sheet to be available in the cab and ideally visually displayed.

Hydraulic cranes only permitted not mechanical.

### 8.1. Crawler crane

#### Minimum requirement - Plant

- Conformité Européene (CE) certificate
- Current 12 monthly LOLER thorough examination certificate
- Current six monthly LOLER thorough examination certificate for all lifting tackle carried
- Current six monthly LOLER certificate for the crane
- Have either a four yearly overload test certificate or a defined written scope of examination scheme supported by a declaration of compliance in line with the maintenance and thorough examination of mobile

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## Plant and equipment minimum standards

cranes best practice guide (Crane Interest Group (CIG)1001, June 2010 (updated November 2019)  
Maintenance, inspection and thorough examination of mobile cranes)

- Operator's instructions must be available on the machine
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- Mirrors / to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be directional, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- 360° all round visibility aids (camera system) to fitted to all crawler cranes / piling rigs (mini rigs excluded) ([refer back to: Section 1 introduction](#))
- ROPS and FOPS cab structure
- Lifting accessories marked with SWL
- Fitted and operational audible or visual overload warning system
- Slew alarms
- Tracks only to be retracted on flat level stable ground, crane must be fitted with spirit level in the operator's sight line showing acceptable limits
- Door lock keys supplied
- Aircraft warning lights fitted (if working within the vicinity of aerodromes)
- Slew, jib height and radius restrictors if working in the vicinity of overhead power lines, railways, adjacent live traffic, etc.
- Hook block over hoist cut-out facility
- Boom hoist cut-out facility
- Handrails fitted to running boards and crane upper structure
- Load bearing hydraulic cylinders fitted with check valves
- Crane fitted with anemometer or other device to monitor in service wind speeds
- Independent checks to be completed (Magnor Plant) for all external crawler cranes. Note: Magnor Plant personnel must attend a full site induction, before entering each respective site / project
- Maximum machine age 15 years
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine / load will be prevented from striking passing traffic e.g. slew restrictors, banksman or track lock.
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Man riding requirements

- Carrier hoisting and lowering ropes minimum diameter of eight millimeter
- Current six monthly LOLER thorough examination certificate for crane and all lifting tackle
- Hook fitted with safety catch
- Ability to restrict the working speed of all crane functions to 0.5 metre
- Control levers return to neutral automatically
- SWL of crane configuration in use is at least twice the rated capacity of the carrier
- Power lowering capacity fitted to the crane. If not, free fall capability must be locked out.
- Refer to BS7121 -1:2019 for further guidance.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system

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## Plant and equipment minimum standards

- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off if approached by others and keys removed from the cab before leaving the cab unattended for any reason.
- Full site-defined PPE required if outside the cab – non loose fitting PPE required in all cases to avoid catching on controls
- Must have passed an alcohol and drug test prior to starting work
- Valid medical certificate
- CPCS card for category of crane
- Competency assessment prior to being put to work – log book checks
- Evidence of familiarisation training for type of crane to be operated
- Lifting plan and permit to lift in place as appropriate

### Desirable - Plant

- All machines to come fitted with latest 360° camera technology, c/w machine and pedestrian interface capability, see note six on Minimum Standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator
- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Means for operator to monitor hoist rope tension such as camera or mirror
- Red, amber and green high level illumination to indicate crane is operating within safe limits
- Crane supervisor to have hand held anemometer to measure wind speeds
- Jib head tracker if working on sites with blind lifting issues
- Counterweight mounted colour CCTV
- Window guards
- Telescopic operator cabs fitted
- Where crawler cranes are used over shaft work, it is desirable for:
  - Cranes to be fitted with elevated cabs
  - Fitted with hook block cameras.

### Desirable - Emissions

- Maximum desirable machine age eight years and compliant to Stage 4 (Diesel Particulate Filters (DPFs)) or better engine emissions

### Desirable - Operator

- Operator to have minimum of three years relevant operating experience
- Operator subject to on-going medical screening / surveillance

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Load path – slewing over site personnel
- Overturning if lifting duties exceeded
- Imposed loadings on underground services
- Dropped loads
- Jib clash with adjacent cranes / tall plant
- Ground conditions capable of withstanding imposed track loadings

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## Plant and equipment minimum standards

- Operating in reversing mode
- Use of jib walkways – falls from height
- Potential excessive noise.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 8.2. Mobile crane (hydraulic cranes only permitted not mechanical)

#### Minimum requirements - Plant

- CE certificate and current test certificate
- Have either a four yearly overload test certificate or a defined written scope of examination scheme supported by a declaration of compliance in line with the maintenance and thorough examination of mobile cranes best practice guide (CIG 1001; June 2010 (updated November 2019) Maintenance, inspection and thorough examination of mobile cranes)
- Current 12 monthly LOLER thorough examination certificate minimum. Sites with exceptional hazards it is recommended a six monthly thorough examination to be completed, this would be identified through risk assessment.
- Current six monthly LOLER thorough examination certificate for all lifting accessories carried and marked with SWL as minimum. Sites with exceptional hazards it is recommended a three monthly thorough examination of all lifting accessories, this would be identified through risk assessment
- Operator's instructions must be available on the machine
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- Mirrors / colour CCTV 360° camera system to satisfy one metre high at one metre distance visibility criteria or crane to be escorted on site by plant marshal
- ROPS and FOPS cab structure
- Lifting accessories marked with SWL
- Fitted and operational audible or visual overload warning system
- Slew alarms
- Door lock keys supplied
- Aircraft warning lights fitted (if working within the vicinity of aerodromes)
- Slew, jib height and radius restrictors if working in the vicinity of overhead power lines, railways, adjacent live traffic, etc.
- Anemometer fitted to all cranes
- Over hoist limit device installed
- Operation manual including load charts to be available with the machine on site
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Protective mesh must be in place to side of cab on jib side if window is opening type
- Carrier hoisting and lowering ropes minimum diameter of eight millimetres
- Hook fitted with safety catch
- Load bearing hydraulic cylinders fitted with check valves
- Chassis brakes to be tested under Special Type General Order (STGO) requirements as per Construction Plant-hire Association (CPA) Technical Information Notice (TIN) 104 requirements for in-service performance testing of the chassis brakes of mobile cranes
- Crane needs to be fitted with a 'Dead Man' (the operator has to be in the seat to operate the crane, once operator leaves the seat the 'Dead Man' is operational)
- Regular checks must be carried out on the cranes out rigger mats including the condition of the handles
- Any cranes that are accompanied with independent ladders, these ladders must contain inspection stickers

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## Plant and equipment minimum standards

to evidence checks have been carried out and are in date, on a regular basis.

- Maximum vehicle age 15 years
- If used under overhead cables or obstructions
  - Height restrictors with indication on machine
  - Health and safety executives GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. slew restrictors, or banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Man riding requirements

- Current six monthly LOLER thorough examination certificate for crane and all lifting tackle
- Hook fitted with safety catch
- Ability to restrict the working speed of all crane functions to 0.5 metres/second
- Control levers return to neutral automatically when released
- SWL of crane configuration in use is at least twice the rated capacity of the carrier
- Power lowering capacity fitted to the crane. If not, free fall capability must be locked out
- Refer to BS7121-1:2019 for further guidance.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off if approached by others and keys removed from the cab before leaving the cab unattended for any reason.
- Full site-defined PPE required if outside the cab – non loose fitting PPE required in all cases to avoid catching on controls
- Must have passed an alcohol and drug test prior to starting work
- Valid medical certificate
- CPCS card with category A60C – all duties; A – blocked duty only; B – pick and carry duties only
- Competency assessment prior to being put to work – log book checks
- Evidence of familiarisation training for type of crane to be operated
- Lifting plan and permit to lift in place as appropriate
- Minimum of cat C driving licence when unit over 7.5 tonne GVW

### Desirable - Plant

- Camera to be fitted to cathead to give operator clear view of load when blind lifting
- Seat belt operation interlocked with ignition switch / warning indicator
- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Means for operator to monitor hoist rope tension for example camera or mirror
- Red, amber and green high level illumination to indicate crane is operating within safe limits
- Crane supervisor to have hand held anemometer to measure wind speeds
- Fall restraint system fitted to boom for rigging super-lift
- Sectional / lightweight or circular outrigger pads if manually handled to reduce risk to personnel
- Use of slew restrictors where appropriate
- Reversing alarm to be directional and white noise
- Fleet Operator Recognition Scheme (FORS) compliant.

### Desirable - Emissions

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- Maximum desirable vehicle age eight years and EURO 4 emissions compliant or better

### Desirable - Operator

- Operator to have relevant operating experience on type of crane
- Operator subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Load path – slewing over site personnel
- Overturning if lifting duties exceeded
- Imposed loadings on underground services
- Dropped loads
- Jib clash with adjacent cranes / tall plant
- Reversing manoeuvres
- Outrigger pads can be very heavy and awkward shapes

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 8.3. Telehandler

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- On public highway – taxed, registered and insured and compliant with road vehicles (Construction and Use regulations)
- Current 12 monthly LOLER thorough examination certificate (six monthly required if machine being used in conjunction with man-riding basket)
- Current six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Lifting duty chart to be displayed on boom or in cab
- Operator's instructions must be available on the machine
- Evidence of regular inspection plus next service and or inspection due date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake. Brakes should be checked as part of the service, 500 hours or six monthly
- Check valves must be fitted
- External green light to be fitted to indicate when seatbelt is fastened, exception to this being by risk assessment for vehicle traveling on public highways.
- All round mirrors and 360° all round visibility aids to be fitted. As a minimum the machine must be fitted with

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- all round vision mirrors and reverse camera ([refer back to: Section 1 introduction](#))
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- ROPS and FOPS cab structure
- Fitted and operational audible or visual overload warning system
- All machines to be restricted to ten mph (miles per hour) in forward gears
- If lifting from forks (under slinging) proper attachments must be fixed with heel pins (not T screws) and have specific lift plan
- Mechanical prop fitted under boom for maintenance purposes
- Forks to be folded / secured if travelling on public highway
- Protective mesh to be in place on jib side of cab if window is of opening type
- No materials including lifting tackle to be stored beneath the boom
- Boom ram lock facility must be provided with the machine
- Only fully integrated man-riding baskets are permitted when supported by a task specific risk assessment.
- Maximum vehicle age five years
- Lifting accessories;
  - Six month thorough examination
  - Certified lifting points for all lifting duties
  - Lifting duty chart to be displayed or available in the cab Safe load indicator or rated capacity indicator
- If used under overhead cables or obstructions;
  - Height restrictors with indication on machine
  - health and safety executives GS6 avoidance of danger from overhead electric power lines must be followed.
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Lift plan and/or permit to lift must be briefed and understood
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A17
- Training in lifting suspended loads, when operating Telehandler with suspended loads driver must have correct CPCS category (Suspended Loads).
- Competency assessment prior to being put to work – be familiar with machine and telehandler attachments
- Check for ground conditions prior to lifting and must consider stabilisers where appropriate
- Competent to check Rated Capacity Indicator (RCI)
- Machine levelling devices must be used in all cases if fitted
- Operator must ensure the boom is carried at a safe level at all times in accordance with the manufacturer's recommendations
- Must have current relevant drivers licence (category B) if driving on public highway
- Authorisation required prior to driving on public highway by site manager / contractor

### Desirable - Plant

- Full all round camera system to be fitted, 360°. Where possible the latest technology cameras should be fitted which include both machine and pedestrian interface capability.

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- Complete people exclusion area around plant and operation
- Green seat belt beacon and operation interlocked with ignition switch / warning indicator
- Tracker unit – immobilising method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Inclinator gauge and/or decal advising of gradient limits for safe operation
- Boom angle indicator
- Tyre pressure indicators
- Maintain a list of weights of potential items to be lifted
- ROPS particularly with all-terrain models

### Desirable - Emissions

- Engine emissions compliant to Stage 4 or better (Stage 5 due in 2021)
- Electric engine available for 6m Telehandlers

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Lifting and carrying suspended loads.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 8.3.1. Rotary telehandler

Self-propelled, diesel powered rotational telehandler with a reach from 21m- 35m and lift capacity from 4000kg - 7,000kg.

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- On public highway – taxed, registered and insured and compliant with road vehicles (Construction and Use regulations)
- Current 12 month LOLER thorough examination certificate
- Current six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Lifting duty chart to be displayed on boom or in cab
- Operator's instructions must be available on the machine
- Evidence of Pre-hire inspection, plus "next service and or inspection due" date sticker
- All safety decals in place and legible
- Seat belt must be fitted and operational

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- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake. Brakes should be checked as part of the service, 500 hours or six monthly
- Check valves must be fitted
- External green light fitted to indicate when seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on the public highways
- All round mirrors and 360° all round visibility aids to be fitted. As a minimum the machine must be fitted with all round vision mirrors and reverse camera (refer back to: Section 1 introduction)
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- ROPS and FOPS protected cab
- Boom ram lock facility must be provided with the machine
- Supplied with lights and if used on public highway - compliance with C&U regulations (indicators, registration plate's front and rear etc.)
- 4x4 drive train
- Live tracking system
- Red pre-overload beacon
- Slew restriction
- Height restriction
- Live load chart computer (visual and audio)
- Live load chart to prevent and shut off before overload occurs
- Air conditioning
- Locking doors with keys
- Isolation switch with key
- Cab steps and handles painted high visibility yellow ensuring three points of contact is achievable
- Where access is required at height for security and maintenance purposes, suitable handrails must be in place to prevent falling from height
- Longitudinal load movement control system
- If lifting from forks (under slinging) proper attachments must be fixed with heel pins (not T screws) and have specific lift plan
- Locking caps / covers to fuel and all other tanks
- Labelled each side with tyre inflation pressure and wheel nut torque figures
- Tracker unit fitted
- Maximum vehicle age five years
- Lifting accessories:
  - Six month thorough examination
  - Certified lifting points for all lifting duties
  - Lifting duty chart to be displayed or available in the cab
  - Safe load indicator or rated capacity indicator
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Accessories

- Standard fork carriage
- 1.8 metre fork extensions
- Two metre wide carriage forks

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- 360° rotating forks
- Carriage winch four tonne – seven tonne capacity
- Fly jib winch 2.5 metre long two tonne – three tonne capacity
- Three metre crane jib two tonne – six tonne capacity
- Carriage hook four tonne – six tonne capacity
- Reduced height hook four tonne – six tonne capacity
- 300kg-1000kg / 2.2m metre – four metre extendable fully integrated man platform
- Remote control.

**Minimum requirement - Operator**

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab / e-inspection
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Lift plan and/or permit to lift must be briefed and understood
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE - non loose fitting PPE required in all cases to avoid catching on controls
- Telehandler A17 Cat D including 360° slew (forks only)
- Telehandler A17 Cat E suspended loads (if using with hooks or winches)
- Telehandler A77 (new licence which includes all the above)
- IPAF 1b (if using integrated man platform two – four metre extendable)
- Full on site familiarisation offered by UK Forks FOC
- Familiar and competent to utilise Roto accessories
- Check for ground conditions prior to lifting and must consider stabilisers where appropriate
- Competent to check Rated Capacity Indicator (RCI)
- Abide by specific company policies, procedures and permits
- Always operate / use the equipment in accordance with manufacturer’s instructions / recommendations
- Must have current relevant drivers licence (category B) if driving on public highway
- Authorisation required prior to driving on public highway by site manager / contractor

**Desirable - Plant**

- Full all round camera system to be fitted, 360°. Where possible the latest technology cameras should be fitted which include both machine and pedestrian interface capability
- Complete people exclusion area around plant and operation
- Green seat belt beacon and operation interlocked with ignition switch / warning indicator
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Forward fork camera for working at height (gives operator visibility of what they are lifting at full reach).
- Attachment auto recognition
- Stabiliser pads for stabiliser legs

**Desirable - Emissions**

- Engine emissions compliant to Stage 4 (Stage 5 due in 2021)

**Desirable - Operator**

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

**Hazards / risks**

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Effect of weather visibility and working / traffic surfaces

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## Plant and equipment minimum standards

- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if on uneven ground or lifting duties exceeded
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Lifting and carrying suspended loads.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 8.4. Lorry loader crane minimum requirement vehicle requirements

#### Minimum requirement - Vehicle

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Ministry of Transport (MOT) plating certificate
- Current operator 'O' licence displayed in the cab windscreen
- On public highway, taxed, registered and insured, and compliant with road vehicles Construction and Use regulations - (spray suppression, under run guards, lighting, markers etc.)
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign "HIGHWAY MAINTENANCE" to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))
  - Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit
- Safe access to all areas where operator or slinger / signaller required to work
- Edge protection or fall arrest arrangements where access to vehicle body required
- Audible and visual warning to be fitted in the cab to remind driver / operator including the hydraulic arm

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- fitted, is not safety stowed prior to travelling
- Remote control units must be checked to ensure sufficient battery power is available for the intended operations. It should be clean and free from damage including the wearing harness and umbilical cable (where relevant). The operation of the emergency stop button and any other isolating devices must be checked for operational function.
- Maximum machine age eight years
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - Health and safety executives GS6 avoidance of danger from overhead electric power lines must be followed.
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Crane requirements

- Current 12 monthly LOLER thorough examination certificate
- Current six monthly LOLER certification for all on-board lifting tackle and accessories
- Have either a four yearly overload test certificate or thorough examination in line with Association of Lorry
- Loaders Manufacturers and Importers (ALLMI) guidance note 010 and CPA
  - ALLMI management of lifting operations with lorry loaders best practice guide June 2010
- Accessories to be marked with safe working loads
- Crane duties chart displayed on boom or at operator's station
- Functioning audible warning devices – safe load indicator / rated capacity indicator / device with hydraulic lock-out / warning light / alarm
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine / load will be prevented from striking passing traffic e.g. slew restrictors, banksman remote cut out.

### Minimum requirement - Driver / operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belts must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required if outside the cab – non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A36 with endorsement for A – hook; B – clamshell C – hydraulic clamp
- Road Transport Industry Training Board (RTITB) and ALLMI lorry loader operator certification is also acceptable
- Competency assessment prior to being put to work – be familiar with machine
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Lift plan and/or permit to lift must be briefed and understood

### Desirable - Vehicle

- Seat belt operation interlocked with ignition switch / warning indicator
- Outrigger lock-out preventing crane operation with legs in stowed position
- Stabiliser legs not stowed warning device
- Sensor de-rate system if crane is used short-rigged

### Desirable - Emissions

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- Maximum desirable machine age five years and compliant to EURO 5/6 or better engine emissions

### Desirable - Operator

- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Load path – slewing over site personnel
- Overturning if lifting duties exceeded
- Ground conditions capable of withstanding imposed track loadings
- Imposed loadings on underground services
- Dropped loads / instability of load
- Jib clash with adjacent cranes / tall plant

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 9. Mobile Elevating Work Platform (MEWP) general

All plant to be inspected prior to first use and the appropriate pre-use inspection sheet completed and daily recorded inspections thereafter.

### Minimum requirement - Plant - all MEWP's

- Pre-use inspection signed off by the operator (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Six monthly LOLER thorough examination certificate
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher available with MEWP
- All road wheels to be fitted with wheel nut indicators
- Power failure safe lowering system
- When MEWP's are used in situations involving a risk of crushing against overhead structures or equipment, specific control measures must be implemented and the use of electronic secondary guarding devices must be used
- Movement / travel alarm to be fitted, working and audible
- SWL displayed in platform
- Outrigger / wheel loading details
- Controls should be designed in such a way to protect against the risk of sustained involuntary operation. This can take the form of physical guards or standoff bars
- Direction of travel must be clearly indicated
- All MEWP's must adhere to EN280:2003 or later (introduction of load sensing at the platform)
- If MEWP's are to be used to lift materials to height, then appropriate material handling attachment must be used (Refer to [HSE Guidance GEIS 6](#))

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## Plant and equipment minimum standards

- When working on highways all MEWP's must display full Chapter 8 livery. Refer to Introduction (Section 1 above) for details.
- Maximum machine age six years
- If used under overhead cables or obstructions
  - Height restrictions with indication on machine
  - HSE GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Boom type MEWP's only

- Flashing amber beacon
- Harness anchorage points in boom platform.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Lift plan and/or permit to lift must be briefed and understood
- Engine must be turned off and keys removed from the machine before leaving the machine if left unattended
- Full site-defined PPE required – non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card with category of MEWP to be operated; A25 – scissor; A26 – boom; A27 – mast climber, or
- IPAF certification (1a – static vertical; 1b – static boom; 3a – mobile vertical; 3b – mobile boom)
- Evidence of familiarisation training for the particular type of MEWP to be operated, including emergency recovery from the ground
- Trained in use of harness as appropriate
- Use of harness – harness to be worn in boom type MEWP or in the scissor lift if travelling and to be appropriate for specific use
- Be briefed on the site plant and vehicle management procedures and check for overhead obstructions and hazards.

### Desirable - Plant

- MEWP's to have 110 volt supply available in basket pre-wired
- Wheel nut indicators fitted
- Tilt alarm fitted
- Fire suppression in engine compartment if working in a zone of fire risk or if emergency basket to basket evacuation procedures not practical
- Fish eye mirrors for all round vision when travelling
- Toolbox equipment storage in basket
- Effective fleet management system should be used to drive efficiency and improve safety (see Sky Sentry on Nationwide Platforms Service Level Agreement)
- It is desirable for all machines used on site to come fitted with the latest secondary guarding system and where applicable material handling attachments to be utilised. See appendices for more detail.

### Desirable - Scissor type MEWP's only

- Flashing beacon on scissor lift
- Harness anchorage point in scissor lift (mandatory if it is to be used whilst travelling).

### Desirable - Emissions

- Maximum desirable machine age Five years and compliant to Stage 4 or better engine emissions

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## Plant and equipment minimum standards

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access onto work platform / refuelling and maintenance
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Overturning if lifting duties exceeded or poor ground conditions
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Ground conditions / underground services – imposed wheel / outrigger loadings
- Falls from height
- Operator recovery from an incapacitated machine
- Ground conditions capable of withstanding imposed wheel track loadings
- Uneven ground conditions and driving up ramps during travelling can create a risk of crush / impact injury
- Handling materials on MEWP platforms can overload machinery or be at risk of falling
- Potential for clashes with other plant working in the vicinity
- Stability when travelling machine with platform raised
- Clearances between buildings / other platforms
- High wind speed
- Operating in reversing mode

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 9.1. MEWP – Spider lift type only

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Six monthly LOLER thorough examination certificate
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Safety decals indicating the partial deployment of outriggers when moving machines over soft or rough ground must be fitted
- Damage responsibility decals must be fitted
- On lithium battery powered machines a charging decal must be fitted
- International Powered Access Federation (IPAF) 1B safe driving advice decal must be fitted
- Fire extinguisher available with MEWP
- A power failure emergency lowering facility must be fitted
- Outriggers must display the maximum load applied by them
- If used to install materials, an appropriate material handling device must be used (refer to [HSE Guidance GEIS 6](#))
- No Petrol engines acceptable under any circumstances
- All engines (where fitted) able to run only using red or white diesel

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- Where the operator cage can be removed from the machine (for narrow access) a suitable approved safety mechanism must be fitted so that the cage is always secure when replaced
- Four spreader pads of an appropriate standard size must be supplied with each machine
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

**Minimum requirement - Operator**

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Lift plan and/or permit to lift must be briefed and understood
- Engine must be turned off and keys removed from the machine before leaving the machine if left unattended
- Full site-defined PPE required – non loose fitting PPE required in all cases to avoid catching on controls
- IPAF certification (1b – static boom)
- Evidence of familiarisation training for the particular type of MEWP to be operated, including emergency recovery from the ground
- Any machine 30m working height or above to be supplied with IPAF operator on first day for extended familiarisation.
- Trained in use of harness as appropriate
- Be briefed on the site plant and vehicle management procedures and check for overhead obstructions and hazards.

**Desirable - Plant**

- It is desirable for all machines used on site to come fitted with the latest secondary guarding system and where applicable material handling attachments to be utilised. See appendices for more detail.
- A facility for extending/retracting the tracks to make the machine wider or narrower
- Where a machine is able to be run on battery or mains electric it should be capable of being run on either 240v or 110v
- Machines should have either umbilical cord remote control or radio remote control to drive them around.
- Crane lifting attachment points should be marked with an appropriate decal
- A decal should be fitted indicating the safe angle and direction of any climb, the use of any safety chocks and safe positioning of an operator when climbing gradients

**Desirable - Operator**

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

**Hazards / risks**

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access onto work platform / refuelling and maintenance
- Danger of crushing in slew zone
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility

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- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Stability when driving with tracks / wheels retracted
- Stability when driving over soft or rough ground
- Stability when driving the wrong way across side to side gradients
- Incorrect set up of machine leading to instability or disablement.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

**10. Road sweeper / collector**

**General**

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter. Inspection sheet to be available in the cab and ideally visually displayed.

**Minimum requirement - Vehicle**

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Ministry of Transport (MOT) plating certificate
- On public highway – taxed, registered and insured, and compliant with road vehicles (Construction and Use regulations)
- All current certificates / service documents provided
- Operator’s instructions must be available on the machine
- Evidence of regular inspection, plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign “HIGHWAY MAINTENANCE” to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- Mirrors / colour Closed Circuit Television (CCTV) to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))
  - Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit

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## Plant and equipment minimum standards

- Dual gulley brush and wide main brush
- Gulley sucker and hand lance
- Safe and clean access to cab
- Safe and clean access for refuelling
- Reversing camera
- Park brake not engaged warning device
- Maximum vehicle age 15 years
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- CSCS card (Road Sweeper and Gullysucker Operator, NVQ L2)
- Calm Networks training in safe operation, use, cleaning and storage of standpipes (training available through - [www.waterservices.org.uk](http://www.waterservices.org.uk))
- Demonstrable training and experience in operation of sweeper / collector
- Competency assessment prior to being put to work – be familiar with machine
- Operator to be Traffic Management (TM) trained in mobile works
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification

### Desirable - Vehicle

- Seat belt operation interlocked with ignition switch / warning indicator.
- Reversing alarm to be directional and white noise
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Base colour to be conspicuous as per Chapter 8 requirements. Refer to Introduction (Section 1) for further details.

### Desirable - Emissions

- Maximum desirable vehicle age five years and compliant to EURO 5/6 or better engine emissions

### Desirable - Operator

- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines

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## Plant and equipment minimum standards

- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Danger of flying debris during wash out of bin and filters or using hand lance
- Danger of crushing under un-propped body
- Uncontrolled disposal/discharge of waste

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 11. Compressors / air systems

#### General

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter.

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Copy of manufacturer's operating instructions
- Evidence of regular inspection and maintenance, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Access to a portable fire extinguisher at the place of work
- Unique ID number to be displayed on plate including Vehicle Identification Number (VIN)
- Noise emissions label in compliance with OND 2000/14/EC
- All current pressure systems regulation certificates in place
- Canopy to have integral fuel bunding for environmental protection
- Whip checks to be provided between hose and compressor and hose and tools
- Towing eye type attachment only
- 12 weekly inspection on running gear
- Maximum machine age eight years
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- All hoses should be inspected regularly (daily, pre-use checks).
- Demonstrable training and experience in operation of compressor / air system
- Competency assessment prior to being put to work – be familiar with machine
- All hoses should be inspected regularly (daily, pre-use checks)
- Be familiar with HAVS monitoring requirements

#### Desirable - Plant

- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and other tanks
- Statement of hours to next service
- Security hitch lock

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## Plant and equipment minimum standards

### Desirable - Emissions

- Maximum machine age eight years and compliant to Stage 4 or better engine emissions.

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access for refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Loading / unloading onto transport
- Towing and lifting operations
- Overturning
- Flying debris
- Trailing hoses
- Manual handling when moving compressor and when using of heavy attachments
- Open hoses when airline switched on
- Noise and vibration
- Damage to jockey wheel due to misuse / lack of proper maintenance.

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 12. Rollers

### General

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter. Inspection sheet to be available in the cab and ideally visually displayed.

### 12.1. Ride on compaction roller

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Compliant with Construction and Use (C&U) Regulations if being used for occasional highway use (lights, registration plates front and rear)
- If used on public highway - taxed, registered and insured
- All current certificate / service documents
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Access to a portable fire extinguisher at the place of work
- Seat belt must be fitted and operational
- Flashing amber beacon
- When working on highways all rollers must display full Chapter 8 livery. Refer to Introduction (Section 1 above) for details
- Brake efficiency testing to be carried out e.g. daily user park and service brake and dynamic brake efficiency test at maximum six monthly intervals
- An external green light fitted to indicate when the seat belt is fastened the exception to this being by risk

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## Plant and equipment minimum standards

- assessment for vehicle travelling on public highways
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- 360° all round visibility aids (camera system) to be fitted to all cabbed compaction Rollers only ([refer back to: Section 1 introduction](#))
- Small machines – ROPS
- Large machines – ROPS and FOPS
- Safe and clean access to cab
- Safe and clean access for refuelling
- Locking caps and covers
- Isolation switch with key
- Under seat starter / isolator pressure switch
- A clear safety zone around the operating areas
- Maximum age of plant 15 years
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Driver / operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the roller before leaving the roller is left unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A31
- Competency assessment prior to being put to work – be familiar with machine
- Operator must have a current driving licence (Category B) if driving on the public highway
- Authorisation required to drive roller on public highway by site manager / contractor
- Operator to mount and dismount machine using fixed access arrangements and always facing the machine

### Desirable - Plant

- Cabbed machines where possible to come fitted with the latest 360° camera technology, c/w machine and pedestrian interface capability. See note six on minimum standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator. Cabbed machines only
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Base colour to be conspicuous as per Chapter 8 requirements. Refer to Introduction (Section 1) for further details.

### Desirable - Emissions

- Desirable maximum age of plant eight years and compliant with Stage 4 or better engine emissions (Stage 5 due in 2012)

### Desirable - Operator

- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection
- Whole body vibration monitoring

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## Plant and equipment minimum standards

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Serious risk of overturning on inclines or when working on edges
- Effect on adjacent excavations, buried services or structures from vibration
- Noise and vibration

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 13. Tracked dozer

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- External green light fitted to indicate when seatbelt is fastened
- Mirrors / to satisfy one metre high at one metre distance visibility criteria
- 360° all round visibility aids (camera system) to be fitted ([refer back to: Section 1 introduction](#))
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- ROPS to cab
- Safe and clean access to cab
- Safe and clean access for refuelling
- Maximum age eight years
- If winch fitted – associated lifting gear to have six monthly thorough examination record
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required – non loose fitting PPE required in all cases to avoid catching on controls

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## Plant and equipment minimum standards

- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- CPCS card category A34
- Competency assessment prior to being put to work – be familiar with machine
- Ensure door is closed when machine is operating

### Desirable - Plant

- Machines to come fitted with latest 360° camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator and green seat belt beacon to be fitted
- Complete people exclusion zone around plant and operation
- Reversing alarm to be directional and 'white noise'
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Track adjustment particularly slackening by competent personnel only with appropriate tools and PPE
- Two way radio system / hands free to communicate with operator
- Coloured card system for operator to acknowledge presence of other persons or vehicles
- FOPS to cab where risk of falling debris
- Proximity detection system
- Global Positioning System (GPS) control system for blades as this will reduce the need for persons on the ground for surveying
- GPS control system to be installed at ground level to avoid working at height

### Desirable - Emissions

- Desirable maximum age of plant five years and compliant with Stage 4 or better engine emissions (Stage 5 due in 2021)
- Hybrid engine available for 6T tracked dozers

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Underground services
- Serious risk of overturning on inclines or when working on edges
- Risks of towed items e.g. roller
- Speed of machine movement – proximity of plant marshal
- Reversing movements
- Falls from height when erecting GPS masts

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

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## Plant and equipment minimum standards

### 13.1. Wheeled loading shovel minimum requirements plant

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current 12 month LOLER thorough examination certificate
- Current six month LOLER examination of all on-board lifting equipment or handling attachments
- Lifting duty chart displayed on boom or in cab
- Operating / maintenance instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon
- All road wheels to be fitted with wheel nut indicators
- Brake efficiency testing to be carried out e.g. daily user park and service brake and dynamic brake efficiency test at maximum six monthly intervals
- External green light fitted to indicate when the seat belt is fastened the exception to this being by risk assessment for vehicle travelling on public highways
- All round mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- 360° all round visibility aids (camera system) to be fitted to all machines ([refer back to: Section 1 introduction](#))
- ROPS and FOPS cab structure
- Safe and clean access for refuelling and maintenance
- Safe and clean access to cab
- Machine lifting points / tie down points must be clearly labelled and be in good condition
- Locking caps and covers
- Articulation lock must be fitted and operational
- Ensure door is closed when machine is operating.
- Maximum machine age eight years
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Minimum requirement - Driver / operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required – non-loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A21 together with appropriate endorsement
- Competency assessment prior to being put to work – be familiar with machine
- If driving on the public highway, operator must have current driving licence (category B) and be a minimum of 18 years of age
- Authorisation to take plant onto public highway by site manager / contractor
- All site speed limits must be briefed and complied with
- Ensure door is closed when machine is operating.

#### Desirable - Plant

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## Plant and equipment minimum standards

- Machines to come fitted with latest 360° camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.
- Seat belt operation interlocked with ignition switch / warning indicator
- Proximity detection system
- Automatic braking systems which stop the machine if an obstruction is detected

### Desirable - Emissions

- Desirable maximum age of plant five years and compliant with Stage 4 or better engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Danger of crushing
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- Serious risk of overturning on inclines, soft or uneven surfaces
- Operator falling from machine when alighting or dismounting machine
- Restricted visibility on larger machines or if travelling with bucket raised too high
- Trapping fingers / hand in door due to accidental closure
- Reversing movements

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 14. Agricultural tractors

Self-propelled diesel powered agricultural tractors

### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- 'O' licence required if machine used in a goods carrying activity on the public highway (not including plant crossings). If required, current operator 'O' licence displayed in the cab windscreen.
- On public highway - taxed, registered and insured
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Must be supplied with lights if used on public highways, compliance with C&U Regulations (Vehicle Excise Duty (VED) registered, working lights, indicators and registration plates front and rear)
- Operator's instructions must be available on the machine
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- All safety decals in place and legible
- Fire extinguisher in cab
- Seat belt must be fitted and operational
- Flashing amber beacon

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## Plant and equipment minimum standards

- Mirrors / CCTV to satisfy one metre high at one metre distance visibility criteria
- Front and rear work lights
- Access and egress painted high visibility yellow, ensuring three points of contact is achievable
- If used for towing must have hydraulic and/or air breaking capability.
- If used under overhead cables or obstructions
  - Height restrictions with indication on machine
  - HSE GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from ignition in the cab before leaving the cab if left unattended for any reason
- Full site-defined PPE required – non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A33
- Competency assessment prior to being put to work – be familiar with machine
- Operator must have a current, relevant driving licence if driving on the public highway.
- Authorisation required prior to driving on public highway by site manager / contractor
- Operator to mount and dismount machine using fixed access arrangements and always facing machine
- Ensure machine is operated in accordance with manufacturer's instructions and guidance
- If towing special consideration must be given to the weight being towed, the operator must consider stability when towing and must refer to the operators manual prior to towing for weights and capabilities
- Ensure correct fuel type is used dependent on task, if unsure check with plant department on use of rebated fuel in tractors

### Desirable - Plant

- Compliant to Stage 4 engine emissions (Stage 5 due in 2021)

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Safe and clean access into the cab before entering and dismounting as well as refuelling
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation including loading / unloading
- High risk of overturning at speed on inclines or when towing

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## Plant and equipment minimum standards

- Not to be used for towing unless an approved and operational tow hitch is fitted
- Only to be used on gradients that are within the machines capabilities (please refer to operators manual).

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 15. Mixer truck

#### General

All plant to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter. Inspection sheet to be available in the cab and ideally visually displayed.

#### Minimum requirement - Vehicle

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Ministry of Transport (MOT) plating certificate
- Current operator 'O' licence displayed in the cab windscreen.
- On public highway - taxed, registered and insured, and compliant with road vehicles (Construction and use regulations)
- All current certificates / service documents provided
- Operator's instructions must be available on the machine
- Evidence of regular vehicle inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seats belt must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign "HIGHWAY MAINTENANCE" to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- Mirrors / CCTV to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))
  - Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit
- Safe access to all areas where the operator is required to work including full handrail protection etc.
- Remote control units must be checked to ensure sufficient battery power is available for the intended operations. It should be clean and free from damage including the wearing harness and umbilical cable (where relevant). The operation of the emergency stop button and any other isolating devices must be checked for operational function.
- Maximum vehicle age 10 years

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## Plant and equipment minimum standards

- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Driver / operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seats belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- Hand and skin dermatitis protection / monitoring
- Demonstrable training and experience in operation of mixer truck
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification

### Desirable - Vehicle

- Seat belt operation interlocked with ignition switch / warning indicator
- Reversing alarm to be directional and white noise
- Isolation method independent of factory fitted locks
- Locking caps / covers to fuel and all other tanks
- Statement on hours to next service
- Provision and use of a ConcreteSock™, or equivalent, to prevent unwanted discharges from concrete truck mixers during transit (refer to EA innovation briefing 17, issue dated May 2011, for further details - <https://drive.google.com/file/d/1GAz48Ezk5msNiILYFchcND9errcO-NfH/view?usp=sharing> )

### Desirable - Emissions

- Maximum desirable vehicle age five years and compliant to EURO 5/6 or better engine emissions.

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Danger of moving parts – rotating drum
- Danger of spills when filling or discharging or driving up steep inclines
- Tripping over hoses on ground or slipping on spills
- Number of climbing operations in to and out of the cab and when inspecting drum contents

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**Plant and equipment minimum standards**

- Imposed loadings on underground services
- Hazard from concrete washout discharging
- Noise and visibility
- Proximity to concrete skips being lifted
- Work at height – access on to top of tank / body

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

**16. Vacuum / suction excavator (lorry mounted 26 tonne and 32 tonne machines) c/w either hydraulic or counterbalanced suction arm**

**General**

Utilising the no-dig suction excavation method for material removal, extraction and excavation enable individuals to work across a huge array of projects from huge construction sites to one off residential projects.

The benefits of using this high powered suction method allows underground services to be exposed, without damage to cables and most importantly, the operative. Vacuum / suction excavators are ideal for the extraction and removal of wet and dry materials (e.g. water, clay, soil, stones, dust and ballast) via vacuum into a debris tank, which immediately removes any unsightly debris from the working site. Suction excavation also helps reduce the amount of additional equipment / vehicles used to undertake the activity.

**Minimum requirement - Vehicle / plant**

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- 'O' licence required if vehicle used in a goods carrying activity on the public highway (not including plant crossings). If required, current operator 'O' licence displayed in the cab windscreen.
- On public highway, taxed, registered and insured, and compliant with road vehicles (C&U Regulations)
- All machines need to have annual MOTs and main dealer inspection records (12 weekly)
- 10 weekly Driver Vehicle Standards Agency (DVSA) inspection
- Annual truck MOT
- Operator's instruction must be available on the machine
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Road vehicles should be equipped with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign "HIGHWAY MAINTENANCE" to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))
  - Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and

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- operating within the London Low Emission Zone must hold a DVS safety permit
- Remote control units must be checked to ensure sufficient battery power is available for the intended operations. It should be clean and free from damage including the wearing harness and umbilical cable (where relevant). The operation of the emergency stop button and any other isolating devices must be checked for operational function.
- Remote control unit must be clearly labeled (all controls)
- Stabilisers must be fully extended before any tipping operation commences
- Operating instructions must always be followed for both machine start up and shut down procedures
- Safe access to all areas where the operator and banksman are required to work
- Edge protection or fall restraint arrangements where access to vehicle body is required
- 250mm / 280mm non-conductive nozzles must be used in preference to metal nozzles
- Castled (sometimes described as serrated) design of nozzles is to ensure air flow is maintained when placed against the ground; it is not to be used to cut the earth when extracting soil
- Only non-conductive and / or insulated hand held tools and air lances which incorporate ‘dead man trigger and guard’ are to be used
- Compressor hoses must be fitted with whip check cables
- Ground piercing accessories should not be used unless agreed with site before work commences and should always be subject to risk assessment
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE’s GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

**Minimum requirement - Driver / operator**

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required – non-loose fitting PPE required in all cases to avoid catching on controls
- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- All operators to be accredited with CITB / CPCS category ‘Vacuum Excavator – A78 Suction Excavator Category (Endorsements A-H)’ that includes:
  - A: Trailer - Manual arm
  - B: Trailer - Semi powered arm
  - C: Non-KGV - Manual arm
  - D: Non-KGV - Semi powered arm
  - E: Non-KGV - Semi powered arm
  - F: Non-KGV - Fully powered arm (Senior)
  - G: LGV semi-powered arm - Second Operator (Non-LGV driver)
  - H: LGV fully powered arm - Second Operator (Non-LGV driver)
- CSCS / EUSR skill card (TT-UK Suction Excavation category) or equivalent
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Novice operator with industry experience but no machine experience must have undergone no less than 28 hours targeted training with a vacuum extraction system
- Novice operator with no industry or machine experience must have undergone no less than 35 hours targeted training with a vacuum excavator

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- Operator with similar (vacuum / suction excavator) machine experience must have undergone no less than seven hours targeted training with a vacuum extraction system
- Operator with unrelated machine experience must have undergone no less than 14 hours targeted training with a vacuum extraction system
- Training in use of air-ex
- Site specific risk assessment must be undertaken by operator before the commencement of works
- Golden Rule – Stop for Safety, and report to site supervisor
- Lone working is not permitted
- Ensure a 'second man' has been briefed and is aware of the location of all emergency stop buttons, as noted in the CPA Good Practice Guide (8.68) suction excavators should be considered a two person operation unless suitable risk assessments and method statements have been put into place to reduce the risk as far as reasonably practicable. The CPA Good practice Guide defines lone working as “ where an individual is working by themselves without close support or supervision”
- Trial holes must be agreed with the customer and are subject to risk assessment
- Never work below the boom of the arm
- Remain in control of the remote control unit at all times
- Work from a position of safety at all times
- Undergo a recorded annual operator assessment
- Full face protection (safety goggles may be worn by risk assessment)
- Hearing protection
- Spoil shall be tipped to an agreed area

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection
- Driver operator to have passed safety critical worker medical.

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Poor communication – communication protocols must be agreed with other team members prior to any work commencing
- Emergency procedures – emergency arrangements and procedures shall be communicated to a 'second man' by the operator. These procedures must be adhered to and practiced before work commences
- Remote control operation – sufficient length of the umbilical cord when operating with a pendant control unit to allow operations from a safe place. Isolating of all operating controls when using a remote unit, when carrying out other functions or during rest periods
- Plant and personnel interface - no maneuvering or reversing to commence unless authorised by a nominated vehicle marshaller in defined areas. Physical barriers that contains full operating radius or reach of boom and/or hose nozzles and prevents unauthorised access to the working area. Prevention of working directly beneath the boom and/or hose nozzle
- Public interface – area to be fenced off and screened as necessary to protect public and others from noise, dust and flying particles
- Entry to exclusion zones – procedures to stop all works, move components / hose to a safe position and machine isolated when operator is approached by others. Protection of open excavations to prevent slips, trips and falls
- Underground services – procedures and hierarchy procedures for the identification and location of underground services. Ground piercing accessories shall not be used unless agreed with site before work commences and should always be subject to risk assessment

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- Effects of ground conditions – compressed air or water can be used to agitate and displace porous and semi porous ground conditions. If the ground is parched and solid, water should be introduced and allowed to soak, air-ex can then be used.
- Working adjacent to live traffic
- Danger or crushing under un-propped body
- Disposal of waste products
- Do not operate if machine is or appears to be damaged
- Controls should be secured so that unauthorised operation is effectively prevented when the machine is not in use
- No steel suction nozzles are allowed
- At no time must anyone work or walk underneath the boom or vacuum nozzle, whether it is being operated or not
- No entry into exclusion zone unless signalled by operator
- Non-invasive excavation techniques to be used only, as per manufacturer's instructions

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 17. Concrete pump

#### Minimum requirement - Plant

If truck mounted:

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Ministry of Transport (MOT) plating certificate
- Current VED (Vehicle Excise Duty) and operator 'O' licence displayed in the cab windscreen
- On public highway, taxed, registered and insured, and compliant with road vehicles (C&U Regulations)
- Current 12 month LOLER thorough examination certificate
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign "HIGHWAY MAINTENANCE" to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- Mirrors and camera – to satisfy current HSE interpretation of PUWER 98 regulation 28(e), for example all round visibility
- Reversing alarm to be fitted, working and audible at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))

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- Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit
- Safe access for maintenance activities
- Handrails / edge protection on body where access required
- Remote controls for the operator
- Door lock keys supplied
- Locking caps and covers
- Ball catcher fitted to discharge end during cleaning operations
- Park brake not engaged warning device.
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - E.g. slew restrictors, banksman remote cut out or similar
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- If used adjacent lives lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Driver / operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site-defined PPE required - non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card with category A06 – truck mounted boom
- Evidence of familiarisation training for the type of pump to be operated
- Evidence that the operator is medically fit to operate the pump
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with the current Driver CPC qualification

### Desirable - Plant

- Seat belt operation interlocked with ignition switch / warning indicator
- Nylacast outrigger pads
- Illuminated pump control panel
- Hands free voice activated radio communications between pump operator and concrete team/second man
- Spill kit
- Handrails fitted around pipe storage areas at rear of vehicle
- Decals detailed tyre pressures and wheel nut torque settings

### Desirable - Emissions

- Engine emissions compliant to EURO 5/6 or better

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

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Significant hazards / risk identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface – trapping / crushing of site operatives
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Overturning – ground capable of withstanding imposed outrigger loadings
- Failure of pressurised lines and use of compressed air to clean pipes
- Vibration and manual handling when using compressed air system
- Potential excessive noise
- Blockages in pipework
- Whip from flexible hoses
- Boom clash with overhead obstructions, power lines, adjacent cranes
- Hazard from concrete washout discharging
- Remote control operation
- Uncontrolled discharge of waste concrete
- For further guidance, refer to BS8476:2007 code of practice for using concrete pumps. Also British Concrete Pumping Group Publication Safe use of Concrete pumps  
[www.cpa.uk.net/british-concrete-pumping-group-bpcg-publications/](http://www.cpa.uk.net/british-concrete-pumping-group-bpcg-publications/)

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 18. Concrete extrusion machine

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- CE Declaration of Conformity and current test certificate
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety decals in place and clean (legible)
- Fire extinguisher available with machine
- Flashing amber beacons front and rear at a height not to interfere with driver visibility
- Travel / movement alarm fitted (working and audible at 10m for five seconds)
- Elephant ears rubber guards fitted to both sides of concrete feeder hopper
- Fixed hinged guard and access steps across concrete feeder hopper and fixed hinged guards to inclined auger
- Steps fitted to access above guards and to mould and driving platforms
- Handrail to sides of inclined auger to facilitate use of access steps
- Podium steps for access to inclined auger access steps
- Fixed guards on horizontal auger incorporating isolation switches to immobilise auger when guards are removed
- Access platform with guardrail around horizontal auger to access front of auger for cleaning and maintenance
- Solid guard rails around mould and driving platforms
- Rubber track bumper guards
- Adequate task working lights
- Pressure washer to be available for cleaning off
- Exclusion zone between tracks and adjacent to structures
- Working platforms to be kept clear from debris

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## Plant and equipment minimum standards

- Towing facility to facilitate for lighting sets
- Storage facilities for hand tools and lubricants etc
- Emergency stops
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Engine must be turned off and keys removed from the machine before leaving the machine if left unattended
- Full site-defined PPE required – non-loose fitting PPE required in all cases to avoid catching on controls
- Evidence of appropriate training for extrusion machines
- Evidence of familiarisation training for the type of machine to operated
- Evidence of pressure washer training
- Ensure that exclusion zone is established with cones not fewer than five metres around machine prior to movement of machine (this forms part of RAMS)
- Hand and skin dermatitis protection / monitoring

### Desirable - Plant

- Adequate lighting for night time working as given in raising the bar standard B15
- Adjusting compensation plate
- Guards on conveyors
- Training records to be developed to show course content

### Desirable - Emissions

- Engine emissions compliant to Stage 4 or better.

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection
- Provision of good standard of welfare including showers and drying rooms

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Transportation of machine including loading / unloading
- Entrapment by inserting limbs into moving machinery
- Ground conditions / imposed loadings on underground services
- Transportation, loading / unloading and fitting of moulds

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## Plant and equipment minimum standards

- Noise and vibration
- Clothing snagged on chute leading into auger

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

### 19. Mobile crushing plant

#### Minimum requirement - Plant

- Pre-use inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Crusher to be registered with Environment Agency (EA) / Scottish Environment Protection Agency (SEPA)
- Operator's instructions must be available on the machine
- Evidence of regular inspection, plus "next service and or inspection due" date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher available with machine
- Flashing amber beacon
- All exposed, contactable, moving parts fully guarded
- Guards to be fitted with interlocks to prevent operation with guards removed
- Isolation procedure to ensure that no person enters the hopper / crusher to clear blockages. Power must be switched off if any tools are to be used to dislodge material
- Mechanical means to remove blockage, operated remotely
- Isolation procedure with multi locking main panel arrangement to facilitate safe maintenance
- Working platforms on machine in good order and edge protection secure and intact
- Emergency stop controls to be available at various locations around machine
- Conveyor fitted with trip wires (where not fully shrouded)
- Dust suppression fitted and operational
- Automatic greasing
- Plant to be operated remotely or ensure that the ramp to loading hopper is effectively banded
- All control functions clearly marked on both machine and remote control
- Provision of safe area of where operator can view and monitor the performance of the feed hopper
- If loading buckets are used, ensure that they are compatible with the capacity of the crusher
- Stalled crusher procedure to ensure safe system is in place to deal with machine that has installed under load
- Effective belt scrapers to prevent build-up of material on conveyor.
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

#### Minimum requirement - Operator

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available with machine
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment for the task
- Engine must be turned off and keys removed from ignition before leaving the machine if left unattended
- Full site-defined PPE required – non loose fitting PPE required in all cases to avoid catching on controls
- CPCS card category A42 (for all persons operating the crusher)
- Trained in isolation and stalled crusher procedures
- No access to crusher when operational
- Ensure minimum five metres physical exclusion zone around crushing area.

#### Desirable - Plant

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- CCTV fitted to breaker / pecker mounted on machine to deal with hopper blockages
- Water mist dust suppression rather than directional jets
- Sizing bars on hopper feeds to eliminate oversize materials
- Metal detector installed on feed belts
- Fixed cameras to monitor machine operation
- Remote emergency stop controls for use by loader / loading shovel operators.

### Desirable - Emissions

- Engine emissions compliant to Stage 4 or better

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating machine and for those adjacent to machine:

- Access onto machine / refueling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Plant and personnel interface
- Transportation of machine including loading / unloading
- Dust generation by crusher and from stockpiled material / access roadways. High silica content of some crushed materials, e.g. concrete / bricks
- Ejected materials – general use and when magnet ejector is in use, e.g. crushing demolition waste
- Interface with site plant and vehicles
- Falls from height whilst checking / maintaining machine
- Deterioration of loading access ramp – vehicles sliding or driving off the edge
- Whole body vibration when working on platform
- Noise output – noise induced hearing loss
- Clearance of blocked / stalled crushers
- Entrapment in moving parts of machine
- Stockpile stability, machine overturn
- Slips, trips and falls due to accumulation of waste on platforms and around machine
- Potential delays / poor access for emergency services, particularly where crushing is being undertaken in remote locations
- Stored energy from electrical, hydraulic, compressed air, mechanical sources and gravity
- Build-up of material at tail drum of machine

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

## 20. Volumetric mixer

### Minimum requirement - Vehicle

- Pre-use (daily) inspection signed off (all hire companies to supply operator pre use inspection checklist Planned Preventative Maintenance (PPM))
- Current Ministry of Transport (MOT) plating certificate
- Current operator 'O' licence displayed in the cab windscreen
- On public highway, taxed, registered and insured, and compliant with road vehicles (C&U Regulations)
- Machine to be CE marked
- Operator's instructions must be available on the machine

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- Evidence of regular vehicle inspection, plus “next service and or inspection due” date sticker
- All safety labels (decals) in place and legible
- Fire extinguisher in cab
- Seat belts must be fitted and operational
- Roof-mounted amber light bar (visible 360°) with a minimum of two independent light sources / with 2 strobe flashing beacons fitted to rear of vehicle, if required. Refer to introduction, section 1 above, for further details.
- Vehicle conspicuity – Fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2.
- The sign “HIGHWAY MAINTENANCE” to diagram 7404, with 140mm capital letter height, fitted externally on rear of vehicle, in accordance with Chapter 8, clause O5.5.3.
- All road wheels to be fitted with wheel nut indicators
- Reversing lights and reversing alarm audible outside of the cab
- FORS compliant, requirements include;
  - Side guards
  - Rear under run protection
  - Class V (5) and Class VI (6) mirrors
  - Drugs and alcohol decal warning
  - Driver check decal warning
  - Seat belt decal warning
  - Cyclist decal warning (Near Side Rear (NSR), blind spot)
  - Close proximity warning (sensors) audible at ten metres and in cab
  - Visibility aids (rear and side view camera and / or Fresnel lens fitted)
  - Driving licence check (Driver and Vehicle Licensing Agency (DVLA))
  - Recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- Direct Vision Standard (DVS) - HGVs greater than 12 tonnes gross vehicle weight (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit
- Safe access to volumetric mixer controls
- Safe access for refuelling and maintenance
- Chain inspection holes must be fitted with guards / covers
- The auger guard must be fitted with interlock device
- Isolator for auger, belt, chains and drives must incorporate a lock-out device
- Park brake not engaged warning device.
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic e.g. banksman
- Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant. Switch off plant when not in use.
- Do not damage environmental protection measures i.e. fencing, water courses etc.
- Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators.

**Minimum requirement - Driver / operator**

- Full induction attended prior to starting work
- Pre-use (daily) inspection signed off and to be available in the cab
- Compliance with pre-use, daily / weekly defect reporting system
- Evidence of having signed on to the appropriate risk assessment
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full site defined-required PPE - non loose fitting PPE required in all cases to avoid catching on controls
- Evidence of appropriate training and competence assessment for machine (either by the manufacturer or in-house by an operator previously trained by the manufacturer)
- Fix safety chains prior to moving off with auger in the raised (and locked) position
- Working hours to be legally compliant for Heavy Goods Vehicles (HGV) drivers (Working time regulations 1998, EU driving rules, GB domestic driver rules).
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- The operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification

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## Plant and equipment minimum standards

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### Desirable - Vehicle

- Seat belt operation interlocked with ignition switch / warning indicator
- Locking caps / covers to fuel and all other tanks
- Decals detailing tyre pressures and wheel nut torque settings.

### Desirable - Emissions

- Engine emissions compliant to EURO 5/6 or better

### Desirable - Operator

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection

### Hazards / risks

Significant hazards / risks identified when operating the machine and for those adjacent to machine:

- Access into cab / refuelling and maintenance
- Effect of weather visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils and greases
- Limitations to all round visibility
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings
- Entrapment by inserting limbs into moving machinery
- Transportation of machine including loading / unloading
- Clothing snagged on chute leading into auger

Note: All persons preparing risk assessments involving plant are encouraged to visit the proposed area of work and to review previous risk assessments undertaken for similar.

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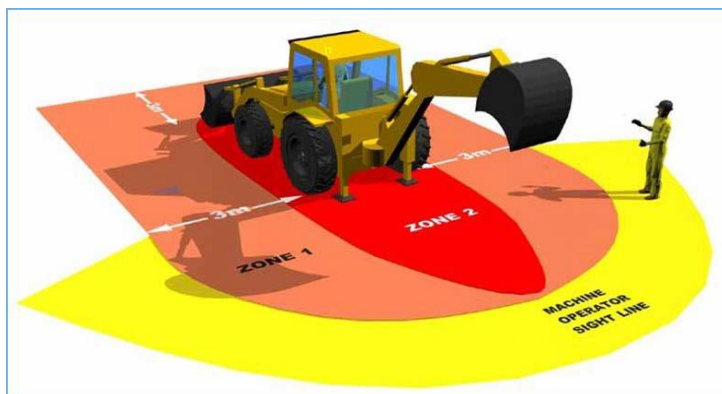
**Appendix 1 – Plant safe zones**

The following diagrams give an understanding of the safe zones applicable to a range of plant machinery likely to be used on site.

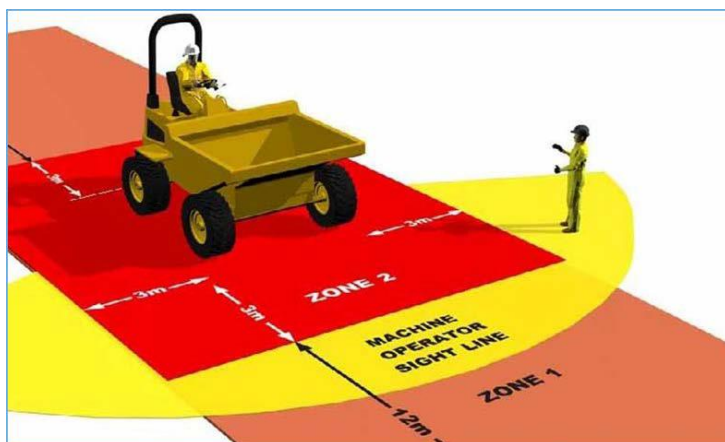
Zone 1	Always signal the plant operator and receive a positive response before entering Zone 1
Zone 2	Keep out of at all times

Anyone approaching plant must make eye contact with the operator and wait until signalled.

Operators are to ensure that any safety levers are activated and machines switched off before people approach.



180° Excavator / loader (JCB3x etc.)



Forward tipping dumper

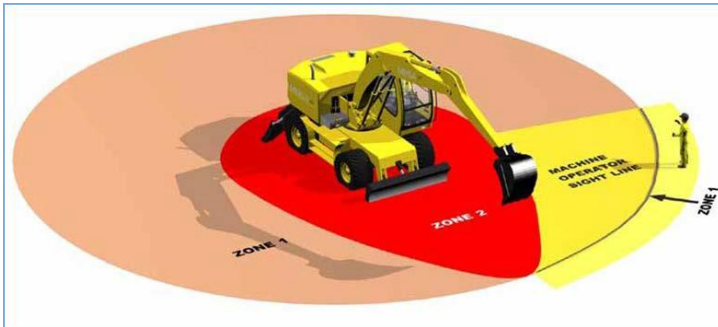


360° tracked excavator

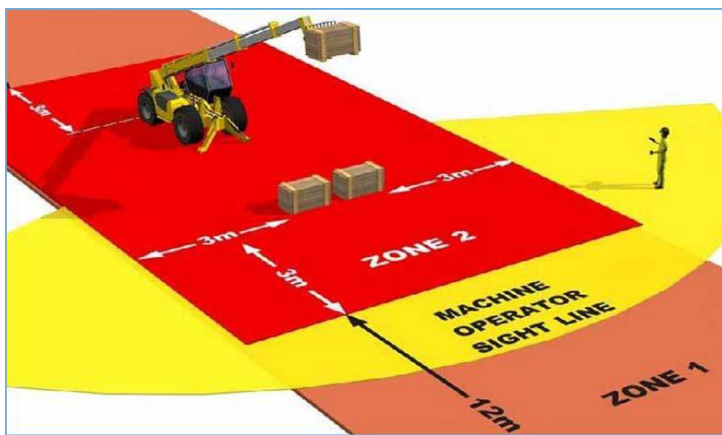
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360° wheeled excavator



Telehandler

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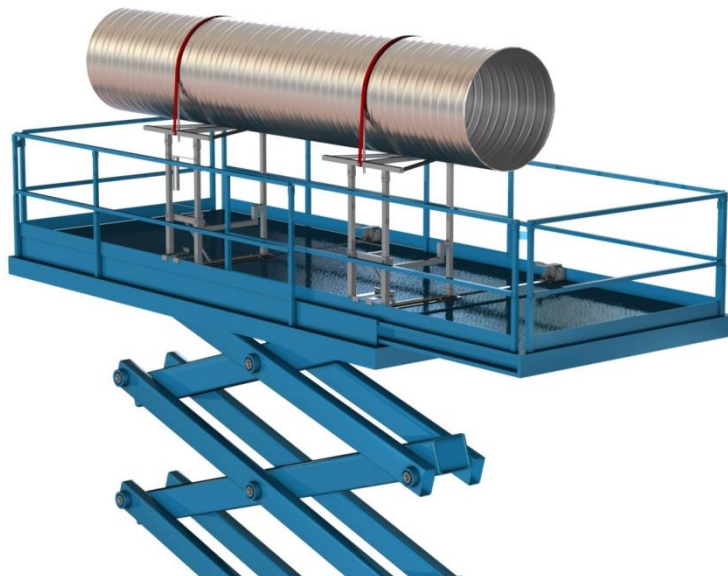
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**Appendix 2 – Material Handling Attachments for MEWP's**

A lightweight material handling attachment designed to work with a wide range of materials. Fits most small electric scissor lifts to enable the fast and safe installation of materials up to 150kg (300kg if fitted as a double and MEWP capacity allows). Materials are securely fastened using the straps provided. (SkyRak)



A material handling attachment designed to carry a wide range of materials up to 600kg in weight, which is safely stored on most large double decked diesel scissor lifts, with no weight on the MEWP handrails. (SkyRakPlus)



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A lightweight material handling attachment allows the safe storage of materials up to 90kg in weight. Designed to work with a wide range of materials on boom type MEWPs. (SkyRakBoom)

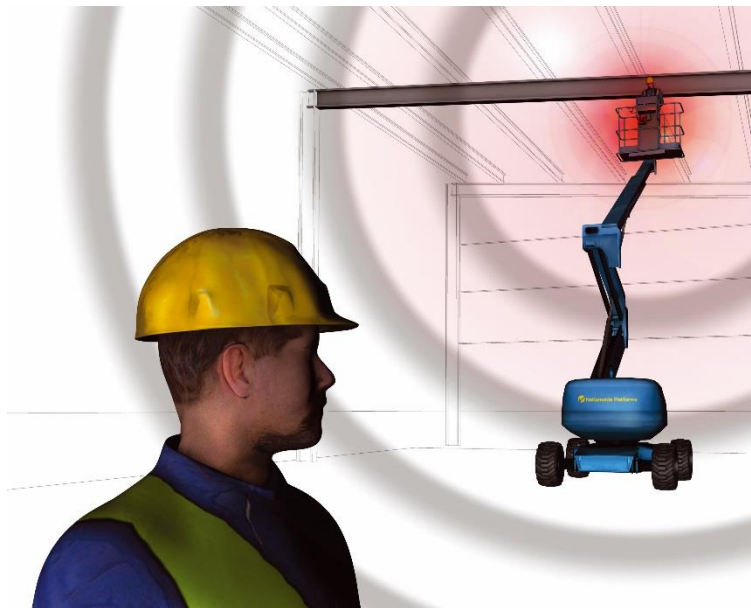


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**Appendix 3 – Secondary Guarding Device**

The pioneering secondary guarding solution is designed to reduce the risk of injury or fatality from crushing on boom type MEWPs. Not only does it stop the MEWP when an entrapment situation is detected, to prevent further crushing, it also has a flashing light and emergency klaxon to attract the attention of colleagues on the ground to enact the emergency lowering procedure without delay. (SkySiren)



Intelligent secondary guarding is advancement in secondary guarding solutions. Giving double protection for operators and designed to prevent entrapment, raise operator alertness and improve safety by detecting potential trap and crush hazards before they can occur – and automatically stops the platform. (SkySirenPCS)



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**Appendix 4 – Effective Fleet Management**

A simple and effective fleet management system designed to help you reduce costs, drive efficiency and improve safety. A full service system designed to improve the management of your powered access fleet and safeguard against unauthorised use.




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Appendix 5 – Plant and equipment minimum standards – poster (PET STD1a)

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	Towable Equipment	180 Degree Excavator	Mini Excavator (up to 8T)	Tracked & Wheeled 360 Degree Excavator (9T and above)	Dual View Damper (6T and above)	Articulated Dump Trucks (20T and above)	Crawler Crane	Mobile Crane	Telehandler	MELWP	Ride on Cabbled Compaction Roller	Tracked Dozer	Forward and Side Tipping Damper (3 T)	Vacuum Extractor European Section Excavator ESE 10/T18/20/22T	Site Generators	Tracked Dumpers	Spider Mowps	Agricultural Tractor
<b>MANDATORY</b>																		
Competency	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
PFM	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
LOLER (PUWER) Legal Standards or 2005 (CRS) minimum and beyond are fully met in addition to above	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
360 degree all round vision cameras				▶														
Variable track (<3T)			▶															
Mass deployment alarm	▶																	
Anti entrapment device									▶									
Work at height protection				▶														
Collision avoidance system Front and rear (2T)													▶					
Rear collision avoidance system (> 6T) or rear camera						▶												
Double locking each hitch (>5T)			▶	▶														
Manipulator attachments quick attach (>5T)			▶	▶														
Hydro and slow reptitors		▶	▶	▶				▶										
Speed restrictors									▶									
Reversing/movement Alarms <sup>1</sup>					▶					▶								
FORS compliant (Freight Operators Recognition Scheme) - Annual MOT / 12 week VOSA inspections																		
<b>DESIRABLE</b>																		
Cabbled machine													▶					
Anti entrapment / secondary guarding system / metal landing attachments are suspended (equipment > 3,000)										▶								▶
360 degree all round vision cameras																	▶	
360 degree all round vision cameras for pedestrian interface system				▶														
110v only outlets / 230v outlets to be locked off															▶			
Consideration to use only Stage III engines or better																		▶

**Environmental Requirements**  
London and Greater London Area  
Engine minimum max currently only Stage II (European Emission Standards) and the NPQM (Non Road Mobile Machinery) Framework (Regulation in Greater London and Canary Wharf).  
Some restrictions in 110v equipment in their operations, construction machinery, mobile cranes and telehandlers.  
From 1st September 2019 NPQM of the power between 37kw and 55kw used in London will be required to meet the standards set in the law. This will apply to both diesel and gas engine speed engines for both transport (road) and portable (not in use). These standards will be based on engine emission standards set in LM Directive 9/88/EC and its subsequent amendments. NPQM will be on the basis of any major developments within Greater London will be required to meet Stage III of the diesel engine minimum NPQM (under any circumstances) and apply only on any site within the Central Activity Zone (Canary Wharf) if will be required to meet Stage III of the standards.  
From 1st September 2020 the following apply NPQM (under any circumstances) site within Greater London will be required to meet Stage III of the diesel engine minimum NPQM (under any circumstances) and apply only on any site within the Central Activity Zone (Canary Wharf) if will be required to meet Stage III of the standards.

**Everyone has the right to be 100% Safe**

This must be read in conjunction with the Plant and Equipment Minimum Standards which are available on IHS: <https://digest.infrastruc.net/home/mse/4-standards-plant-equipment-and-transport-standards.aspx>

- Subject to risk assessment and dependent on operating parameters
- Rear camera minimum requirement - 360 degree camera desirable
- In built up areas this may be replaced with a white noise movement alarm
- Machines 11T and over require full 360 degree camera / all machines under 11T reverse camera minimum requirement
- Applies to petrol site generators only with maximum output of up to 10kVA
- This technology should be available early 2020
- Operators for dual view machines must have completed all product familiarisation training

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