

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 diggers 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.

From 1st September 2015 non road mobile machinery used on any site within the Central Activity Zone or Canary Wharf will be required to meet Stage IIIB of the directive as a minimum. From 1st September 2020 the following will apply; non road mobile machinery used on any site within Greater London will be required to meet Stage IIIB of the directive as a minimum. Non road mobile machinery used on any site within the Central Activity Zone or Canary Wharf will be required to meet Stage IV of the directive as a minimum. For more details regarding this legislation and clarification on what equipment falls into scope please consult 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.

Desirable

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.

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Plant

- Pre-use inspection signed off
- 12 month thorough examination (where applicable)
- On public highway – taxed, registered and insured
- Roll Over Protective Structure (ROPS) and Falling Objects Protective Structure (FOPS) to cab
- Seat belts must be fitted
- Mirrors for all-round visibility
- Flashing amber beacon
- Reversing alarm to be fitted working and audible at ten metre
- All road wheels to be fitted with wheel nut indicators
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place
- 12 monthly thorough examination and six month thorough examination on lifting accessories and manual quick hitch
- Safe Working Load (SWL) to be clearly marked on certified lifting points
- A machine specific lifting duty sheet, lift plan and risk assessment
- An original copy of manufacturers operating instructions
- Compliant with all current UK legislation
- Compliant with European Commission (EC) Machinery Directive 2006/42/EC and supplied with a declaration of conformity.

Operator

- Pre-use (daily) inspection signed off and to be available in the cab
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full induction attended prior to starting work
- Where the vehicle / plant requires the driver to hold a current valid driving license to drive the plant on the public highway, the driver / operator must hold a current valid driving license with the appropriate category for the vehicle / plant being utilised on site
- Full site defined-required PPE
- Compliance with pre-use, daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- Appropriate 'ticket' for machine being used
- 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:
 - Lift plan to be briefed and understood
 - Operator shall be trained in how to use excavator as a crane and specific lifting attachments.

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
- Danger of crushing in slew zone
- Overturning if on uneven ground or lifting duties exceeded
- Use of accessories and how they are attached / inspected such as breaking hammer
- Clothes can get snagged on controls
- Plant and personnel in area of work
- Overhead obstructions – cables / bridges
- Public interface – working alongside pedestrians / vehicles
- Underground services
- Limitations to all round visibility
- Transportation including loading / unloading

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- Hazardous substances such as fuels, oils and greases
- For use on public highway must be taxed and registered
- Evidence of regular inspection plus next service due date
- Forward collision avoidance system (proximity sensor or forward facing camera or similar approved) to ensure one metre high at one metre distance visibility criteria on dumpers of seven tonne and above other devices by job risk assessment
- Reversing alarm to be fitted working and audible
- All safety decals in place
- Operating maintenance instructions
- Engine must be turned off and keys removed before leaving vehicle unattended
- Seat belts and ROPS not used
- Untrained operator
- Insufficient pedestrian / vehicle segregation
- Incorrect vehicle selection
- No banks man / untrained banks man
- Not following manufacturers operating instructions
- Lack of edge protection where vehicles are close to open excavations
- Reversing blind spots.

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
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place
- An original copy of manufacturers operating instructions / safety instructions
- Cables and connection fitments to be inspected prior to use.

Operator

- Pre-use (daily) inspection signed off and to be available
- Operator understanding of stop start procedures
- Full induction attended prior to starting work
- Full site-required PPE and or task specific
- Compliance with pre-use, daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- Appropriate training and “ticket” if required i.e. chainsaw.

Hazards / risks

- Access for refueling and maintenance
- 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
- Clothes can get snagged / trapped in controls or guards
- Transportation including loading / unloading
- Hazardous substances, such as fuels, oils and greases
- 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.

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4. Petrol generator <10KVA

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

General

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- Machine must be supplied with operator instructions
- All safety decals in place and legible.
- 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
- The use of these generators must comply with Health and Safety Executive (HSE) guidance "Electrical Safety on Construction Sites".

Desirable

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

Operator

- Attend full induction prior to starting work
- Be signed on to appropriate safe systems of work documentation for the task
- Complete pre-use check
- Must have completed a product familiarisation briefing
- Report all unsafe conditions or defects with the machine immediately
- 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.

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.

4.1 Diesel generators <20KVA

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

General

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- Machine must be supplied with operator instructions
- All safety decals in place and legible

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- Isolation switch with key
- Electric start
- Must have volt meter and hour meter
- 110v/240v, 64, 32 and 16 amp outlet sockets protected by 30mA residual circuit breaker
- LOLER inspected central lifting eye if applicable
- Towing and lifting weight to be clearly displayed on generator
- When supplying items other than portable tools specific earthing requirements should be checked by a competent person
- 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
- The use of these generators must comply with HSE guidance "Electrical Safety on Construction Sites".

Desirable

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

Operator

- Attend full induction prior to starting work
- Be signed on to appropriate safe systems of work documentation for the task
- Complete pre-use check
- Must have completed a product familiarisation briefing
- Report all unsafe conditions or defects with the machine immediately
- 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 RCD operation should be checked before first use and after each time the generator is moved.

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.

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

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- Machine must be supplied with operator instructions
- All safety decals in place and legible.
- Isolation switch with key
- Silencing pack
- Emergency stop button
- Must have RCD or Residual Current Breaker with Over-current (RCBO) protection
- Engine protection shutdown system with warning lights

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- Fuel level gauge
- Electric start
- Must have volt meter and hour meter
- 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
- LOLER inspected central lifting eye if applicable
- Towing and lifting weight to be clearly displayed on generator
- 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
- 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)).

Desirable

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

Operator

- Attend full induction prior to starting work
- Be signed on to appropriate safe systems of work documentation for the task
- Complete pre-use check
- Must have completed a product familiarisation briefing
- Report all unsafe conditions or defects with the machine immediately
- 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
- 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.

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.

5. Towable equipment

General / operator pre-use checks

- Pre-use / daily inspection signed off
- 12 weekly inspection
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place

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- All lighting towers must come supplied complete with mast deployment alarm and safety system
- Copy of manufacturers operating instructions / safety instructions
- All road wheels to be fitted with wheel nut indicators
- Checks on wheel nuts and wheel nut indicators
- 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
- All towable compressors or air systems must come supplied road legal and fitted with integral fuel bunding for environmental protection
- Drawbar assembly breaking systems and towing eye
- Jockey leg / wheel
- Breakaway cable
- Lights
- Floor access and access ramp
- Equipment securing devices.

Hazards / risks

- Access for moving, loading and maintenance
- Use of accessories and how they are attached / inspected
- Transportation including loading / unloading
- Overloading on axles
- Other work activities in the same area
- Interface with the public
- Driver towing techniques
- Collision and towing at speeds
- Lack of training / supervision
- Incorrect securing of loads.

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))
- 12 month thorough examination
- On public highway – taxed, registered and insured
- ROPS and FOPS to cab
- Seat belts must be fitted and worn
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- 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
- 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
- Reversing alarm to be fitted working and audible at ten metre, in residential or built up areas this may need to be exchanged with a white noise alarm
- All road wheels to be fitted with wheel nut indicators
- Tooth guards must be used at all times when on public highway
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place

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- If wheeled duties use axle locks for other duties stabilisers must be deployed
- Isolation controls by a secondary device, such as seat rotation
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
- Check valves must be fitted to excavators boom and dipper circuits
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
- 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
- Maximum age eight 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. slew restrictors, banks man remote cut out.

Operator

- Pre-use (daily) inspection signed off and to be available in the cab
- Construction Plant Competence Scheme (CPCS) card – category A10 (less than five tonne) or A12 (more than five tonne)
- Cat B car license for road use
- Authorisation required prior to driving on public highway – site manager / contractor
- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- Seat belt must be worn
- Engine must be turned off and keys removed from the cab before leaving the cab if left unattended
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required if outside cab none loose fitting PPE required in all cases to avoid catching on controls
- Compliance with pre-use, daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
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:
 - Lift plan and/or permit to lift must be briefed and understood
 - Operator shall be trained in how to use excavator as a crane and specific lifting attachments.

Desirable

- 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 using a lifting eye, a swivel hook should be considered to ensure load can be maneuvered without risk of swinging back or overloading
- A list of weights of potential items to be lifted should be maintained (lift plan)
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator

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- Use of slew restrictors where appropriate
- Maximum machine age six years of age and compliant to Tier iii B or better engine emissions
- 360 camera system that can pick up pedestrians at a maximum distance of five meters to a minimum zero in all directions
- Decals detailing tyre pressures and wheel nut torque settings.

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

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
- 12 month thorough examination
- Tip Over Protection Structure (TOPS) to cab as minimum and FOPS to cab by risk assessment
- Seat belts must be fitted
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Flashing amber beacon
- Evidence of regular inspection plus next service due date
- Operator instructions must be available on the machine
- Risk assessments to be completed to assess the largest / most stable machine possible to complete the task
- All safety labels (decals) in place
- Check valves must be fitted to excavators' boom and dipper rams for machines of five tonnes and above.

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

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
- 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
- A machine specific lifting duty sheet, lift plan and risk assessment

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)

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- Have an in-cab warning alarm where quick hitch fitted
- Extendable tracks for machines under three tonnes
- All buckets supplied with machines must come without teeth unless requested
- Copy of manufacturers operating instructions
- Pre-use Inspection signed off
- Maximum machine age five 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. slew restrictors, banks man remote cut out or track lock
- An external green light to be fitted to indicate when the seatbelt is fastened, exception to this being by risk assessment for vehicle travelling on the public highways.

Operator

- Pre-use (daily) inspection signed off
- CPCS card category A58A (less than ten tonne)
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Operator to ensure buckets are carried safely at all times
- If lifting operations are required to be undertaken the operator must be trained in how to use the excavator as a crane and in any specific lifting devices.
- Full site-defined PPE required if outside the cab
- Engine must be turned off if approached by others and keys removed from the cab for leaving machine unattended.
- Compliance with pre-use, daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- Do not break ground unless briefed on, received and fully understood a permit to break ground
- Seat belt must be worn
- 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:
 - Lift plan and/or permit to lift must be briefed and understood
 - Operator shall be trained in how to use specific lifting attachments
 - Certified lifting point required for all lifting duties
 - SWL to be clearly marked on all certified lifting points
 - Audible or visual overload system fitted and operational
 - When using a lifting eye, a swivel hook must be used to ensure load can be maneuvered without risk of swinging or overloading.

Desirable

- 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 (Safety Shield option for collision avoidance)
- Reversing alarm to be fitted working and audible at 10 metre in working conditions
- When used for lifting a list of weights of potential items to be lifted should be maintained
- With quick hitch, an in-cab warning alarm for detachment
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Use of slew restrictors where appropriate
- Maximum machine age five years of age and compliant to Tier iii B or better engine emissions
- Reversing cameras on machines of eight tonnes and above.

Hazards / risks

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

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 PPM)
- 12 month thorough examination
- ROPS to cab and FOPS where required by risk assessment where the working environment requires
- Seat belts must be fitted and worn
- Mirrors to satisfy one metre high at one metre distance visibility criteria
 - 360 degree 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](#))
- 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
- Flashing amber beacon
- An external green light fitted to indicate when seatbelt is fastened
- Evidence of regular inspection plus next service due date
- Work at height protection to provide safe work environment when on the machine for refuelling and maintenance etc.
- Operator instructions must be available on the machine
- All safety labels (decals) in place
- Handrails on body where access is required
- Check valves must be fitted to excavators boom and dipper circuits
 - Unless demonstrated that it will not be used for lifting:
 - Six month thorough examination on lifting accessories
 - Audible or visual overload warning system fitted and operational
 - Certified lifting point required for all lifting duties
 - SWL to be clearly marked on all lifting points
 - 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 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, banks man or remote cut out or track lock
 - 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

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Plant and equipment minimum standards

- Pre-use inspection signed off
- 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
- Maximum machine age five years.

Operator

- Pre-use (daily) inspection signed off and to be available in the cab
- CPCS card – category A58a (less than 10 tonne) or A59a (more than 10 tonne)
- Operator to ensure buckets are carried safely at all times
- All hoses to be inspected regularly
- Evidence of having signed on to the appropriate risk assessment for the task
- Compliance with pre-use, daily and weekly defect reporting system
- Do not break ground unless briefed on, have received and fully understood a permit to break ground
- 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 induction attended prior to starting work
- Competency assessment prior to being put to work – be familiar with machine
- Full site-defined PPE required if outside cab none 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:
 - Trained in how to use the excavator as a crane, category for lifting operations is A58c (<10 tonne) or A59c (>10 tonne).
 - Lift plan and/or permit to lift must be briefed and understood
 - Operator shall be trained in how to use specific lifting attachments.

Desirable

- 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
- Zero tail swing ballast / counterweight
- 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
- Handrails on body on thirteen tonne and above where access required
- Track direction indicator note
- When used for lifting a list of weights of potential items to be lifted should be maintained
- Operator subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Maximum machine age five years of age and compliant to Tier iii B or better engine emissions
- Use of slew restrictors where appropriate
- Use of remote banksman cut off switch where appropriate
- All machines to come fitted with latest 360 degree camera technology, complete with (c/w) pedestrian and machine interface capability, see note six on the Minimum Standards poster.

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
- Overturning if lifting duties exceeded
- Use of accessories and how they are attached / inspected – such as breaking hammer

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Plant and equipment minimum standards

- Effect of weather visibility and working / traffic surfaces
- Controls can be caught inadvertently if near to safety lever
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Plant and personnel interface
- Overhead obstructions – cables / bridges
- Public interface – working alongside pedestrians / vehicles
- Underground services
- Limitations to all round visibility
- Transportation including loading / unloading
- Hazardous substances such as fuels, oils and greases.

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 PPM)
- 12 month thorough examination
- On public highway – taxed, registered and insured
- Seat belts must be fitted and worn
- ROPS to cab and FOPS where required by risk assessment where the working environment requires.
- Mirrors to satisfy one metre high at one metre distance visibility criteria
 - 360 degree 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](#))
- 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
- Flashing amber beacon
- Evidence of regular inspection plus next service due date
- Work at height protection to provide safe work environment when on the machine for refuelling and maintenance etc.
- Operator instructions must be available on the machine
- All safety labels (decals) in place
- External green light to indicate when seatbelt is fastened, with the exception to this being by risk assessment for vehicle travelling in public highways
- All road wheels to be fitted with wheel nut indicators
- Machine to be fitted with reverse alarm which is auditable at ten metres, in residential or built up areas this may need to be exchanged with a white noise alarm
- System to prevent operation at speeds in reverse
- Check valves must be fitted to excavators boom and dipper circuits
- Maximum machine age eight years
 - Unless demonstrated that it will not be used for lifting:
 - Six month thorough examination on lifting accessories
 - All lifting points to be certified
 - SWL to be clearly marked on all certified lifting points
 - 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
 - Audible or visual overload warning system fitted and operational
- 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
 - If used under overhead cables or obstructions:

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Plant and equipment minimum standards

- 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 banks man remote cut out.

Operator

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

Desirable

- 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 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 refueling or maintenance
- When used for lifting a list of weights of potential items to be lifted should be maintained
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Maximum machine age five years of age and compliant to Tier iii B or better engine emissions
- Seat belt operation interlocked with ignition switch / warning indicator
- Use of slew and height restrictors where appropriate, risk assessed
- Use of remote banksman cut off switch where appropriate
- All machines to come fitted with latest 360 degree camera technology, c/w pedestrian and machine interface capability, see note six on the Minimum Standards poster.

Hazards / risks

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

- Access into cab / refueling and maintenance
- Danger of crushing in slew zone
- Overturning if lifting duties exceeded
- Use of accessories and how they are attached / inspected such as breaking hammer

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Plant and equipment minimum standards

- Effect of weather visibility and working / traffic surfaces
- Clothes can get snagged on controls prior to release of servo isolator / safety handle
- Operating in reversing mode
- Plant and personnel interface
- Overhead obstructions – cables / bridges
- Public interface – working alongside pedestrians / vehicles
- Underground services
- Limitations to all round visibility
- Transportation including loading / unloading
- Hazardous substances such as fuels, oils and greases.

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

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- Machine must be supplied with operator instructions
- 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

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

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.

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Plant and equipment minimum standards

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

Minimum requirement

Plant

- 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 use on public highway must be taxed and registered
- Pre-use inspection signed off
- Evidence of regular inspection plus next service due date
- ROPS
- Seat belts must be fitted
- Flashing amber beacon
- An 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
- 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
- Reversing alarm to be fitted working and audible
- Locking caps / covers
- Isolation switch with key
- All safety decals in place
- All road wheels to be fitted with wheel nut indicators
- Operating maintenance instructions
- Tow hitch (where permissible) must have correct pin with chain attached to dumper
- Tipping mechanism to be in good condition
- Maximum age six years
- 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.

Operator

- Operators operating Dual View dumpers must have attended full familiarisation training
 - Pre-use (daily) inspection signed off
 - CPCS card category A09A forward tipping wheeled, A09B – forward tipping tracked
 - 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
 - Full induction attended prior to starting work
 - Evidence of having signed on to the appropriate risk assessment for the task
 - Full site-defined PPE
 - Compliance with pre-use, daily and weekly defect reporting system
 - Competency assessment prior to being put to work – be familiar with machine
 - Seat belt must be worn
- 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
 - Do not tip whilst on the move or during high winds
 - Engine must be turned off and keys removed before leaving vehicle unattended.

Desirable

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Plant and equipment minimum standards

- Load measurement device
- Directional white noise reversing warning
- Seat belt operation interlocked with ignition switch / warning indicator
- 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
- 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
- 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
- Maximum machine age six years of age and compliant to Tier iii B or better engine emissions
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Front and rear cameras to be fitted to all Dual View Dumpers six tonne and above.

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
- High risk of overturning at speed and on inclines. Refer to manufacturer's recommendations
- Consider risk of towed items, such as roller
- Transportation including loading / unloading
- Falls / overturning into excavations
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles
- All round visibility / loads restricting driver vision
- Effect of weather on visibility and working / traffic surfaces
- The buckets on side tipping dumpers can protrude significantly when turned to the side, creating a hazard to pedestrians
- Hazardous substances, such as fuels, oils and greases
- Wet materials / clay are prone to stick and cause instability during tipping.

7.2. Articulated dump truck

Hire company to supply operator checklist.

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.

Plant

- Pre-use inspection signed off before each use
- Evidence of regular inspection
- 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
- Seat belts must be fitted and operational
- Mirrors to satisfy visibility criteria
 - 360 degree all round visibility aids (cameras system) to be fitted ([refer back to: Section 1 introduction](#))
- Flashing amber beacon
- Reversing alarm to be fitted, working and audible at ten metres
- Articulation lock must be fitted and operational
- Mechanical prop fitted under body
- No tailgates unless specifically requested and subject to risk assessment
- Locking doors with key to all cabs
- All safety labels (decals) in place
- The operators manual must be present with the machine
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Maximum load capacity (payload) to be clearly marked

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Plant and equipment minimum standards

- 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 road wheels to be fitted with wheel nut indicators
- All Articulated Dump Trucks are to be fitted with Inclonometers.

Operator

- Shall be suitably trained and competent
- CPCS
- Ensure machine is operated in accordance with manufactures instructions and in accordance with their training
- Shall report all unsafe conditions
- Must have a current relevant driving licence (vocational maybe required under certain conditions)
- Full site-defined PPE required - none loose fitting PPE required in all cases to avoid catching on controls
- Operator to be briefed on and to comply with daily checks and defect reporting system. Report defects and stop machine where defect is safety critical
- Shall stop work if any unauthorized / unsupervised personnel enter their immediate work area
- Competency assessment prior to being put to work – be familiar with machine
- 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
- Seat belt must be worn.

Desirable

- 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
- Green seat belt beacon to be fitted
- All machines to come fitted with the latest 360 degree camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.

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.

General

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, "next service and or inspection due" date sticker
- Machine must be supplied with operator instructions
- All safety decals in place and legible
- ROPS and FOPS cab structure
- All machines supplied with reversing camera as a minimum, 11 tonne and above all machines to be supplied with full 360 camera system
- Mirrors to ensure one metre high and one metre distance visibility criteria
- Audible reversing alarm and flashing amber beacon
- 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).

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Plant and equipment minimum standards

Operator

- Operators must be competent and hold a valid industry recognised competence card
- Seat belt must be worn
- 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 personnel enter their immediate work area.

Desirable

- Skip inclinometer in cab warning device
- Quarry spec light to indicate when seat belt worn (green beacon)
- Coloured seat belts to improve visibility
- Green seat belt beacon to be fitted
- 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.

Hazards / risks

- Access and egress, refueling safe and clean
- 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.

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 cranes best practice guide (Crane Interest Group (CIG)1001, June 2010)
- Lifting accessories marked with SWL
- Fitted and operational audible or visual overload warning system
- Operator instructions must be available on the machine
- Flashing amber beacon
- Mirrors / to satisfy one metre high at one metre distance visibility criteria
 - 360 degree all round visibility aids (camera system) to fitted to all crawler cranes / piling rigs (mini rigs excluded) ([refer back to: Section 1 introduction](#))
- Reversing alarm to be directional, working and audible at ten metres
- 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 shaoing 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
- Maximum machine age 15 years

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Plant and equipment minimum standards

- Boom hoist cut-out facility
- Handrails fitted to running boards and crane upper structure
- Load bearing hydraulic cylinders fitted with check valves
- Fire extinguisher in cab
- 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
- 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, banks man remote cut out or track lock.

Operator

- Pre-use (daily) inspection signed off
- Lifting plan and permit to lift in place as appropriate
- CPCS card for category of crane
- Full induction attended prior to starting work and passed drug and alcohol test
- Valid medical certificate
- Evidence of familiarisation training for type of crane to be operated
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required if outside the cab – none loose fitting
- Engine must be turned off if approached by others and keys removed from the cab before leaving the cab unattended for any reason.

Man riding requirements

- Carrier hoisting and lowering ropes minimum diameter of eight millimetre
- 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 -1:2006 for further guidance.

Desirable

- Jib head tracker if working on sites with blind lifting issues
- Counterweight mounted colour CCTV
- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Window guards
- Operator to have minimum of three years relevant operating experience
- 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
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Telescopic operator cabs fitted
- Maximum desirable machine age eight years and compliant to Tier iii B, Diesel Particulate Filters (DPFs) better engine emissions
- All machines to come fitted with latest 360 degree camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.
- Where crawler cranes are used over shaft work, it is desirable for:
 - Cranes to be fitted with elevated cabs
 - Fitted with hook block cameras.

Hazards / risks

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

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Plant and equipment minimum standards

- Access into cab / refuelling and maintenance
- Danger of crushing in slew zone
- 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
- Effect of weather visibility and working / traffic surfaces
- Operating in reversing mode
- Plant and personnel interface
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Jib clash with adjacent cranes / tall plant
- Public interface – working alongside pedestrians / vehicles
- Limitations to all round visibility
- Use of jib walkways – falls from height
- Hazardous substances such as fuels, oils and greases
- Potential excessive noise.

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 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
- FOPS to cab where identified by risk assessment
- Fitted and operational audible or visual overload warning system
- Over hoist limit device installed
- Operation manual including load charts to be available with the machine on site
- 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
- Maximum vehicle age 15 years
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Flashing amber beacon
- Reversing alarm to be fitted, working and audible at ten metres
- Anemometer fitted to all cranes
- Door lock keys supplied
- 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
- 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.
- Load bearing hydraulic cylinders fitted with check valves
- Fire extinguisher in cab
- 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

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Plant and equipment minimum standards

performance testing of the chassis brakes of mobile cranes

- 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, banks man remote cut out or similar
- All road wheels to be fitted with wheel nut indicators
- 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 to evidence checks have been carried out and are in date, on a regular basis.

Man riding requirements

- Current six monthly LOLER thorough examination certificate for crane and all lifting tackle
- 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 -1:2016 for further guidance.

Operator

- Pre-use (daily) inspection signed off
- Lifting plan and permit to lift in place as appropriate
- CPCS card with category A60C – all duties; A – blocked duty only; B – pick and carry duties only
- Minimum of cat C driving licence when unit over 7.5 tonne GVW
- Valid medical certificate
- Competency assessment prior to being put to work – log book checks
- Evidence of familiarisation training for type of crane to be operated
- Full induction attended prior to starting work and passed drug and alcohol test
- Evidence of having signed on to the appropriate risk assessment for the task
- Compliance with pre-use, and defect reporting system
- Full site-defined PPE required if outside the cab – none loose fitting
- Engine must be turned off if approached by others and keys removed from the cab before leaving the cab unattended for any reason.

Desirable

- Camera to be fitted to cathead to give operator clear view of load when blind lifting
- Fall restraint system fitted to boom for rigging super-lift
- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Operator to have relevant operating experience on type of crane
- 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
- Sectional / lightweight or circular outrigger pads if manually handled to reduce risk to personnel
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Use of slew restrictors where appropriate
- Crane supervisor to have hand held anemometer to measure wind speeds
- Reversing alarm to be directional and white noise
- Maximum desirable vehicle age eight years and EURO 4 emissions compliant or better
- Fleet Operator Recognition Scheme (FORS) compliant.

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

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

8.3. Telehandler

Minimum requirement

Plant

- Evidence of regular inspection plus next service due date (all hire companies to supply operator pre use inspection checklist PPM)
- FOPS to cab
- Fitted and operational audible or visual overload warning system
- Maximum vehicle age five years
- Seat belts 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.
- Flashing amber beacon
- Reversing alarm to be fitted working and audible at ten metre
- All round mirrors and 360 degree 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](#))
- All machines to be restricted to ten mph (miles per hour) in forward gears
- All safety labels (decals) in place
- All road wheels to be fitted with wheel nut indicators
- On public highway – taxed, registered and insured
- 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
- 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.
- 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
- 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.

Operator

- Pre-use (daily) inspection signed off

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Plant and equipment minimum standards

- CPCS card category A17
- Must have current relevant drivers licence (category B) if driving on public highway
- Authorisation required prior to driving on public highway
- 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
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment / lift plan for the task
- Full site-defined PPE
- Compliance with pre-use, daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine and telehandler attachments
- Seat belt must be worn
- Training in lifting suspended loads, when operating Telehandler with suspended loads driver must have correct CPCS category (Suspended Loads).

Desirable

- Tracker unit – immobilising method independent of factory fitted locks, locking caps / covers to fuel and all other tanks
- Complete people exclusion area around plant and operation
- 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
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Green seat belt beacon and operation interlocked with ignition switch / warning indicator
- Full all round camera system to be fitted, 360 degrees. Where possible the latest technology cameras should be fitted which include both machine and pedestrian interface capability.
- Emissions compliant to tier4 engines or better.

Hazards / risks

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

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

8.3.1. Rotational telehandler

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

Minimum requirement

Plant

- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Engine minimum must comply with the Stage IIIB European Emission Standards and the NRMM Emissions

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Plant and equipment minimum standards

Regulations in Central London and Canary Wharf

- Evidence of Pre-hire inspection
- Operator instructions must be on the machine
- All safety decals in place and legible
- 12 month LOLER thorough examination certificate
- 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
- ROPS and FOPS protected cab
- Live tracking system
- Flashing amber beacons
- Flashing green seat belt beacon
- 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
- Mirrors / CCTV to satisfy one metre high at one metre distance 360° visibility criteria
- Locking doors with keys
- Isolation switch with key
- Cab steps and handles painted high visibility yellow ensuring three points of contact is achievable
- Seat belts must be fitted and operational
- Audible reversing alarm
- Where access is required at height for security and maintenance purposes, suitable handrails must be in place to prevent falling from height
- 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
- Longitudinal load movement control system
- Check valves must be fitted
- 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
- Boom ram lock facility must be provided with the machine
- Wheel nut indicators fitted
- Labelled each side with tyre inflation pressure and wheel nut torque figures
- Tracker unit fitted.

Accessories

- Standard fork carriage
- 1.8 metre fork extensions
- Two metre wide carriage forks
- 360 degree 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.

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Plant and equipment minimum standards

Operator

- Telehandler A17 Cat D including 360 slew (forks only)
- Telehandler A17 Cat E suspended loads (if using with hooks or winches)
- Telehandler A77 (new license which includes all the above)
- Must have current relevant drivers licence (category B) if driving on public highway
- IPAF 1b (if using integrated man platform two – four metre extendable)
- Full on site familiarisation offered by UK Forks FOC
- Competent to check Rated Capacity Indicator (RCI)
- Complete pre-use check sheet / e-inspection
- Abide by specific company policies, procedures and permits
- Always operate / use the equipment in accordance with manufacturer's instructions / recommendations
- Check for ground conditions prior to lifting and must consider stabilisers where appropriate
- Comply with inspection and defect reporting system
- Evidence of having signed on to the appropriate risk assessment / lift plan for the task
- Full site-defined PPE
- Compliance with pre-use, daily and weekly defect reporting system
- Seat belt must be worn
- Familiar and competent to utilise Roto accessories.

Desirable

- Full all round camera system to be fitted, 360 degrees. 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
- Attachment auto recognition
- Stabiliser pads for stabiliser legs
- Forward fork camera for working at height (gives operator visibility of what they are lifting at full reach).

8.4. Lorry loader crane minimum requirement vehicle requirements

- Operator 'O' licence displayed in the cab windscreen
- Current MOT certificate
- Compliance with road vehicles (construction and use) regulations (spray suppression, under run guards, lighting, markers etc.)
- Amber hazard beacons and highway / motorway maintenance' decal
- Operator's instructions must be available on the machine
- Safe access to all areas where operator or slinger / signaller required to work
- Reversing alarm to be fitted, white noise and audible at ten metres
- Fitted with all round vision aids to satisfy one metre high at one metre distance, Lorry to comply with FORs specification, minimum Silver
- 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 fitted, is not safety stowed prior to travelling
- Maximum machine age eight years
 - 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.

Crane requirements

- Current 12 monthly LOLER thorough examination certificate
- 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
- Current six monthly LOLER certification for all on-board lifting tackle and accessories
- Accessories to be marked with safe working loads
- Crane duties chart displayed on boom or at operator's station

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Plant and equipment minimum standards

- 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, banks man remote cut out.

Driver / operator

- Pre-use (daily) inspection signed off
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- CPCS card category A36 with endorsement for A – hook; B – clamshell C – winch
- Road Transport Industry Training Board (RTITB) and ALLMI lorry loader operator certification is also acceptable
- Full induction attended prior to starting work
- Competency assessment prior to being put to work – be familiar with machine
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required if outside the cab – non loose fitting.

Desirable

- Outrigger lock-out preventing crane operation with legs in stowed position
- Stabiliser legs not stowed warning device
- Maximum desirable machine age five years and compliant to EURO 5/6 or better engine emissions
- FORS compliant
- Sensor de-rate system if crane is used short-rigged
- Traffic cones or other means of maintaining safe zones and avoiding pedestrian traffic near lifting
- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Use of slew restrictors where appropriate.
- Hazards / risks
- Significant hazards / risks identified when operating the machine and for those adjacent to machine:
 - Access into cab / refuelling and maintenance
 - 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
 - Plant and personnel interface
 - Overhead obstructions – cables / bridges / power lines / telephone lines
 - Jib clash with adjacent cranes / tall plant
 - Public interface – working alongside pedestrians / vehicles
 - Effect of weather visibility and working / traffic surfaces
 - Limitations to all round visibility
 - Hazardous substances such as fuels, oils and greases.

9. Mobile Elevated Working 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
- Six monthly LOLER thorough examination certificate
- Operation manual supplied
- Power failure safe lowering system
- When MEWP's are used in situations involving a risk of crushing against overhead structures or equipment,

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Plant and equipment minimum standards

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
- Completed operator daily / weekly checklist
- Direction of travel must be clearly indicated
- Maximum machine age six years
- All MEWPS must adhere to EN280:2003 or later (introduction of load sensing at the platform)
- 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 banks man
 - When working on highways all MEWP's must display full chapter eight livery
- All road wheels to be fitted with wheel nut indicators
- If MEWPS are to be used to lift materials to height, then appropriate material handling attachment must be used (Refer to [HSE Guidance GEIS 6](#))
- 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.

Boom type MEWP's only

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

Operator

- Daily inspection signed off
- 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)
- Trained in use of harness as appropriate
- Full induction attended prior to starting work and passed drug and alcohol test
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required if outside the cab – none loose fitting
- Compliance with pre-use, daily and weekly defect reporting system
- Evidence of familiarisation training for the particular type of MEWP to be operated, including emergency recovery from the ground
- 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

- 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
- Maximum desirable machine age Five years and compliant to Tier iii B or better engine emissions
- Toolbox equipment storage in basket
- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- 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

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Plant and equipment minimum standards

where applicable material handling attachments to be utilized. See appendices for more detail.

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).

Hazards / risks

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

- Ground conditions / underground services – imposed wheel / outrigger loadings
- Falls from height
- Access into cab / refuelling and maintenance
- Danger of crushing in slew zone
- Operator recovery from an incapacitated machine
- Overturning if lifting duties exceeded or poor ground conditions
- 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
- Effect of weather visibility and working / traffic surfaces
- 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
- Plant and personnel interface
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Public interface – working alongside pedestrians / vehicles
- Limitations to all round visibility
- Hazardous substances such as fuels, oils and greases.

9.1. MEWP – Spider lift type only

Minimum requirement

- No Petrol engines acceptable under any circumstances
- All engines (where fitted) able to run only using red or white diesel
- A power failure emergency lowering facility must be fitted
- If used to install materials, an appropriate material handling device must be used (refer to [HSE Guidance GEIS 6](#))
- 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
- Outriggers must display the maximum load applied by them
- Safety decals indicating the partial deployment of outriggers when moving machines over soft or rough ground must be fitted
- Hirer's responsibility decal must be fitted
- International Powered Access Federation (IPAF) 1B safe driving advice decal must be fitted
- Four spreader pads of an appropriate standard size must be supplied with each machine
- Damage responsibility decals must be fitted
- On lithium battery powered machines a charging decal must be fitted
- An operator familiarisation must be offered
- Any machine 30m working height or above to be supplied with IPAF operator on first day for extended familiarisation.

Desirable

- 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.

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Plant and equipment minimum standards

- 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
- An operator familiarisation should be carried out
- 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 utilized. See appendices for more detail.

Hazards / risks

- 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.

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

- Current Ministry of Transport (MOT) plating certificate
- Chapter eight compliant beacons and reflective chevrons
- 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 10 metre
- On public highway – taxed and registered
- Maximum vehicle age 15 years
- Evidence of regular inspection
- All safety labels (decals) in place
- All road wheels to be fitted with wheel nut indicators
- All current certificate / service documents
- Dual gulley brush and wide main brush
- Gulley sucker and hand lance
- Copy of operator's instructions must be available on the machine
- Statement of hours to next service
- Safe and clean access to cab
- Safe and clean access for refuelling
- Copy of manufacturer's operating instructions must be available
- Reversing camera
- Park brake not engaged warning device
- FOR's compliant, minimum silver
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Demonstrable training and experience in operation of sweeper / collector
- Full site-defined PPE required
- Compliance with pre-use daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- Operator to be Traffic Management (TM) trained in mobile works
- Authorisation required to drive sweeper on public highway.

Desirable

- Reversing siren to be directional and white noise
- Tracker unit, isolation method independent of factory fitted locks, locking caps / covers to fuel and all other

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Plant and equipment minimum standards

tanks

- Base colour to be conspicuous as per chapter eight requirements
- Operator to be competency assessed in dealing with spills and environmental protection
- Maximum desirable vehicle age five years and compliant to EURO 5/6 or better engine emissions
- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator.

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

- Unique ID number to be displayed on plate including Vehicle Identification Number (VIN)
- Noise emissions label in compliance with OND 2000/14/EC
- Evidence of regular inspection and maintenance
- All safety labels (decals) in place
- 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
- Copy of manufacturer's operating instructions
- Towing eye type attachment only
- 12 weekly inspection on running gear
- Maximum machine age eight years.

Operator

- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment
- Full site-defined PPE required
- Demonstrable training and experience in operation of compressor / air system
- Compliance with pre-use, daily / weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine and HAVS monitoring requirements
- 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
- Maximum machine age eight years of age and compliant to Tier iii B or better engine emissions.

Hazards / risks

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

- Towing and lifting operations
- Access for refuelling and maintenance
- Overturning
- Loading / unloading onto transport
- Flying debris
- Trailing hoses
- Manual handling when moving compressor and when using of heavy attachments
- Open hoses when airline switched on
- Noise and vibration
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles

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Plant and equipment minimum standards

- Hazardous substances e.g. fuels, oils and greases
- Damage to jockey wheel due to misuse / lack of proper maintenance.

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 requirements plant

- Compliant with Construction and Use (C&U) Regulations if being used for occasional highway use (lights, registration plates front and rear)
- Maximum age of plant 15 years
- Chapter 8 compliant beacons and reflective chevrons
- Reversing alarm to be fitted, working and audible at 10 metres
- 360 degree all round visibility aids (camera system) to be fitted to all cabbed compaction Rollers only ([refer back to: Section 1 introduction](#))
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Pre-use inspection signed off
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place
- 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
- Small machines – ROPS
- Large machines – ROPS and FOPS
- Seat belts must be fitted
- An 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,
- Locking caps and covers
- Isolation switch with key
- Under seat starter / isolator pressure switch
- All current certificate / service documents
- Copy of operator's instructions must be available on the machine
- A clear safety zone around the operating areas
- Safe and clean access to cab
- Safe and clean access for refueling.

Driver / operator

- Pre-use (daily) inspection signed off
- CPCS card category A31
- Operator must have a current driving license (Category B) if driving on the public highway
- Authorisation required to drive roller on public highway
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required
- Compliance with pre-use daily and weekly defect reporting system
- Operator to mount and dismount machine using fixed access arrangements and always facing the machine
- Competency assessment prior to being put to work – be familiar with machine
- Seat belt must be worn.

Desirable

- 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 Highways Agency Chapter 8 requirements
- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical

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Plant and equipment minimum standards

screening / surveillance

- Whole body vibration monitoring
- Desirable maximum age of plant eight years with engine emissions to Tier iii B or better
- Seat belt operation interlocked with ignition switch / warning indicator. Cabbed machines only
- Cabbed machines where possible to come fitted with the latest 360 degree camera technology, c/w machine and pedestrian interface capability. See note six on minimum standards poster.

Hazards / risks

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

- Access into cab / refueling and maintenance
- Serious risk of overturning on inclines or when working on edges
- Plant and personnel interface
- Effect on adjacent excavations, buried services or structures from vibration
- Noise and vibration
- Public interface – working alongside pedestrian's vehicles / plant crossings.

13. Tracked dozer

Minimum requirements

Plant

- Reversing alarm to be fitted, working and audible at 10 metres
- Maximum age of plant eight years
- Mirrors / to satisfy one metre high at one metre distance visibility criteria
 - 360 degree all round visibility aids (camera system) to be fitted ([refer back to: Section 1 introduction](#))
- Flashing amber beacon
- ROPS to cab
- Seat belts must be fitted
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place
- If winch fitted – associated lifting gear to have six monthly thorough examination record
- Safe and clean access to cab
- Safe and clean access for refuelling
- Pre-use (daily) inspection signed off
- External greenlight fitted to indicate when the seat belt is fastened.
- CPCS card category A34
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required – non loose fitting
- Compliance with pre-use daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- Do not break ground unless briefed on, received and fully understood a permit to work
- Ensure door is closed when machine is operating.

Desirable

- Complete 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
- Desirable maximum age of plant five years with engine emissions to Tier iii B or better
- 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
- 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

- Seat belt operation interlocked with ignition switch / warning indicator and green seat belt beacon to be fitted
- 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
- Machines to come fitted with latest 360 degree camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.

Hazards / risks

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

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

13.1. Wheeled loading shovel minimum requirements plant

- Current 12 month LOLER thorough examination
- Current six month LOLER examination of all on-board lifting equipment or handling attachments
- Lifting duty chart displayed on boom or in cab
- Maximum age of plant eight years
- White reversing light and alarm to be fitted, working and audible at ten metre
- For use on public highway must be taxed, registered and insured
- ROPS and FOPS to cab where detailed by risk assessment
- An 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
- Flashing amber beacon
- Operating / maintenance instructions must be available on the machine
- Machine lifting points / tie down points must be clearly labelled and be in good condition
- Evidence of regular inspection plus next service due date
- All safety labels (decals) in place
- All road wheels to be fitted with wheel nut indicators
- Seat belts must be fitted
- Locking caps and covers
- Power isolation switch with key
- All round mirrors to satisfy one metre high at one metre distance visibility criteria
 - 360 degree all round visibility aids (camera system) to be fitted to all machines ([refer back to: Section 1 introduction](#))
- Safe and clean access to cab
- Safe and clean access for refueling and maintenance
- Articulation lock must be fitted and operational
- 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
- Ensure door is closed when machine is operating.

Driver / operator

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- Pre-use (daily) inspection signed off
- CPCS card category A21 together with appropriate endorsement
- 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
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Full site-defined PPE required – non-loose fitting
- Compliance with pre-use daily and weekly defect reporting system
- Competency assessment prior to being put to work – be familiar with machine
- All site speed limits must be briefed and complied with
- Seat belt must be worn.

Desirable

- Operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Proximity detection system
- Desirable maximum age of plant five years with engine emissions to Tier iii B or better
- Automatic braking systems which stop the machine if an obstruction is detected
- Green seat belt beacon to be fitted and interlocked with ignition
- Machines to come fitted with latest 360 degree camera technology, c/w machine and pedestrian interface capability, see note six on minimum standards poster.

Hazards / risks

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

- Access into cab / refuelling and maintenance
- Operator falling from machine when alighting or dismounting machine
- Serious risk of overturning on inclines, soft or uneven surfaces
- Plant and personnel interface
- Restricted visibility on larger machines or if travelling with bucket raised too high
- Trapping fingers / hand in door due to accidental closure
- Public interface – working alongside pedestrians vehicles / plant crossings
- Effect of weather visibility and working / traffic surfaces
- Reversing movements
- Hazardous substances e.g. fuels, oils and greases.

14. Agricultural tractors

Self-propelled diesel powered agricultural tractors

General

- Must be compliant with EC Machinery Directive 2006/42/EC
- Evidence of pre-hire inspection, “next service and or inspection due” date sticker
- Machine must be supplied with operator instructions
- All safety decals in place and legible
- 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)
- Front and rear work lights
- Flashing amber beacon
- Seat belts must be fitted
- Access and egress painted high visibility yellow, ensuring three points of contact is achievable
- Mirrors / CCTV to satisfy one metre high at one metre distance visibility criteria
- If used for towing must have hydraulic and/or air breaking capability.

Operator

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Plant and equipment minimum standards

- Operator must be competent and hold valid industry recognised competence card
- Seat belt must be worn
- 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
- Engine must be turned off and keys removed from ignition before leaving unattended for any reason
- 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
- Operator must have a current, relevant driving license if driving on the public highway.

Hazards / risks

- Safe and clean access into the cab before entering and dismounting as well as refueling
- High risk of overturning at speed on inclines or when towing
- 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).

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 requirements

- Current operator 'O' licence displayed in the cab windscreen.
- Current MOT plating certificate
- Mirrors / CCTV to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be fitted, working and audible at 10 metre
- On public highway, taxed and registered and fully compliant with road vehicles (C&U Regulations)
- Evidence of regular vehicle inspection
- All current certificates / service documents provided
- All safety labels (decals) in place
- All road wheels to be fitted with wheel nut indicators
- FOR's compliant minimum silver
- Copy of manufacturer's operating instructions must be available
- Maximum vehicle age 10 years
- 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.

Driver / operator

- Pre-use (daily) inspection signed off
- Minimum of Cat C drivers licence when unit is over 7.5 tonne GVW
- Full induction attended prior to starting work
- Evidence of having signed on to the appropriate risk assessment for the task
- Demonstrable training and experience in operation of mixer truck
- Full site-defined PPE required, hand and skin dermatitis protection / monitoring
- Compliance with pre-use daily and weekly defect reporting system.

Desirable

- Reversing alarm to be directional and white noise
- Isolation method independent of factory fitted locks
- Locking caps / covers to fuel and all other tanks

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Plant and equipment minimum standards

- Statement on hours to next service
- Operator to be competency assessed in dealing with spills and environmental protection
- Driver / operator to have passed drug and alcohol test on induction and subject to on-going medical screening / surveillance
- Seat belt operation interlocked with ignition switch / warning indicator
- Maximum desirable vehicle age five years and compliant to EURO 6 or better engine emissions.

Hazards / risks

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

- Access into cab / refuelling and maintenance
- 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
- Imposed loadings on underground services
- Plant and personnel interface
- Hazard from concrete washout discharging
- Noise and visibility
- Proximity to concrete skips being lifted
- Work at height – access on to top of tank / body
- Public interface – working alongside pedestrians vehicles / plant crossings
- Effect of weather visibility and working / traffic surfaces
- Limitations to all round visibility
- Hazardous substances for example fuels, oils and greases.

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

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 requirements

- Pre-use inspection signed off
- 10 weekly VOSA inspection
- Annual truck MOT
- Seat belts must be fitted
- Machine and accessories safety labels (decals) must be in place
- All road wheels to be fitted with wheel nut indicators
- Remote control unit must be clearly labeled (all controls)
- Amber hazard beacons
- Stabilisers must be fully extended before any tipping operation commences
- Operator's instruction must be available on the machine
- 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'

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Plant and equipment minimum standards

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
- FORS / CLOCS requirements include; side guards, rear under run protection, 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 meters and in cab, visibility aids (rear and side view camera and / or Fresnel lens fitted), Driver License Checks (Driver and Vehicle Licensing Agency (DVLA)) and recorded accredited driving training (CPC, inclusive of vulnerable road users section)
- All machines need to have annual MOTs and main dealer inspection records (12 weekly)
 - 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.

Driver / operator

- Pre-use (daily) inspection signed off
- 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
- HGV / LGV Cat C (Class 2) license as a minimum
- CSCS / EUSR skill card (TT-UK Suction Excavation category) or equivalent
- Compliance with pre-use, daily and weekly defect reporting system
- Training in use of air-ex
- 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
- Site-defined and task specific PPE required if outside the cab – none loose fitting
- Full face protection (safety goggles may be worn by risk assessment)
- Hearing protection
- Spoil shall be tipped to an agreed area
- Novice operator with no industry or machine experience must have undergone no less than 35 hours targeted training with a vacuum excavator
- Novice operator with industry experience but no machine experience must have undergone no less than 28 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
- Operator with similar (vacuum / suction excavator) machine experience must have undergone no less than seven hours targeted training with a vacuum extraction system
- All operators to be accredited with CITB / CPCS category 'Vacuum Excavator – A78 Suction Excavator Category (Endorsements A-H)'.

Desirable

- 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:

- Poor communication – communication protocols must be agreed with other team members prior to any work

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Plant and equipment minimum standards

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
- 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.

17. Concrete pump

Minimum requirement

Plant

If truck mounted:

- Current VED and operator ‘O’ licence displayed in the cab windscreen
- Current MOT plating certificate
- Report of thorough examination with the previous 12 months
- Mirrors and camera – to satisfy current HSE interpretation of PUWER 98 regulation 28(e), for example all round visibility
- Remote controls for the operator
- Safe access for maintenance activities
- Flashing amber beacon
- Reversing alarm to be fitted, working and audible outside of the cab
- Door lock keys supplied
- Locking caps and covers
- Fire extinguisher in cab
- Handrails / edge protection on body where access required
- FORS compliant – minimum operations
- Ball catcher fitted to discharge end during cleaning operations
- If used under overhead cables or obstructions:
 - Height restrictors with indication on machine
 - E.g. slew restrictors, banks man 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
- Park brake not engaged warning device.

Driver / operator

- Pre-use (daily) inspection signed off
- The operator must hold the correct category of driving license for the vehicle / plant being utilised along with the current Driver CPC qualification
- CPCS card with category A06 – truck mounted boom

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Plant and equipment minimum standards

- Appropriate license for the class of vehicle to be operated (lorry mounted pumps)
- Evidence that the operator is medically fit to operate the pump
- Evidence of having signed on to the appropriate risk assessment
- Evidence of familiarisation training for the type of pump to be operated
- Nylacast outrigger pads
- Illuminated pump control panel
- Hands free voice activated radio communications between pump operator and concrete team/second man
- Seat belt operation interlocked with ignition switch / warning indicator
- Spill kit
- Handrails fitted around pipe storage areas at rear of vehicle
- Engine EURO 4 emissions compliant or better
- Decals detailed tyre pressures and wheel nut torque settings
- Significant hazards / risk identified when operating the machine and for those adjacent to machine:
 - Access into cab / refuelling and maintenance
 - Plant and personnel interface – trapping / crushing of site operatives
 - Overturning – ground capable of withstanding imposed outrigger loadings
 - Effect of weather on visibility and work / traffic surfaces
 - 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
 - Public interface – working alongside pedestrians vehicles / plant crossings
 - Effect of weather visibility and working / traffic surfaces
 - Remote control operation
 - Hazardous substances such as cement, additives, fuels, oils and greases
 - 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/

18. Concrete extrusion machine

Minimum requirements

Plant

- CE Declaration of Conformity 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
- Report of thorough examination with the past 12 months
- Report of thorough examination with the past six months for all lifting accessories carried
- All lifting accessories to be marked with SWL
- FOPS to cab where identified by risk assessment
- Fitted and operational audible or visual overload warning system
- Over hoist limit device installed
- Operation manual including load charts to be available with the machine on site
- Mirrors / colour CCTV to satisfy one meter high at one meter distance visibility criteria or crane to be escorted on site by plant marshal
- FORS compliant-minimum silver
- Safe access for refuelling, maintenance and to any place where accessories are stored.

Operator

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Plant and equipment minimum standards

- 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)
- Evidence of having signed on to the appropriate risk assessment
- Hand and skin dermatitis protection / monitoring
- Compliance with pre-use, daily / weekly defect reporting system.

Desirable

- Improved 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
- Provision of good standard of welfare including showers and drying rooms engine emissions to Tier iii or better.

Hazards / risks

- Significant hazards / risks identified when operating the machine and for those adjacent to machine:
 - Access onto machine / refuelling and maintenance
 - Plant and personnel interface
 - Entrapment by inserting limbs into moving machinery
 - Effect of weather on visibility and working / traffic surfaces
 - Ground conditions / imposed loadings on underground services
 - Transportation, loading / unloading and fitting of moulds
 - Noise and vibration
 - Transportation of machine including loading / unloading
 - Clothing snagged on chute leading into auger
 - Limitations to all round visibility
 - Overhead obstructions – cables, bridges, power lines, telephone lines
 - Public interface – working alongside pedestrians vehicles / plant crossings
 - Hazardous substances, e.g. concrete, fuels, oils and greases.

19. Mobile crushing plant

Minimum requirements

Plant

- Maintenance records to be available
- 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
- Crusher to be registered with Environment Agency (EA) / Scottish Environment Protection Agency (SEPA)
- 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

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Plant and equipment minimum standards

- 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.

Operator

- CPCS card category A42 (for all persons operating the crusher)
- Trained in isolation and stalled crusher procedures
- No access to crusher when operational
- Evidence of having signed on to the appropriate risk assessment for the task
- Ensure minimum five meters physical exclusion zone around crushing area.

Desirable

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

Hazards / risks

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

- People / plant interface
- 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
- Hazardous substances, e.g. fuels, oils and greases.

20. Volumetric mixer

Minimum requirements

Plant

- Completed operator pre-use checklist
- Twin rotating amber beacons fitted to cab
- Machine by be CE marked
- Two strobe flashing beacons fitted to rear of vehicle
- Safe access for refuelling and maintenance
- Rear vehicle chevron markings and motorway / highway maintenance signage
- Reversing lights and reversing alarm audible outside of the cab
- Seat belts must be fitted and working
- FORS compliant-minimum silver
- Safe access to volumetric mixer controls

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Plant and equipment minimum standards

- 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
- Pre-use (daily) inspection signed off
- Park brake not engaged warning device.

Driver / operator

- Evidence of appropriate training and competence assessment for machine (either by the manufacturer or in-house by an operator previously trained by the manufacturer)
- Seat belt must be worn
- The operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Evidence of having signed on to the appropriate risk assessment
- Compliance with pre-use, daily / weekly defect reporting system
- 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).

Desirable

- Locking caps / covers to fuel and all other tanks
- Engine emissions to EURO 4 or better
- Operator to be competency assessed in dealing with spills and environment protection
- Seat belt operation interlocked with ignition switch / warning indicator
- Decals detailing tyre pressures and wheel nut torque settings.

Hazards / risks

- Significant hazards / risks identified when operating the machine and for those adjacent to machine:
- Access into machine / refuelling and maintenance
- Plant and personnel interface
- Entrapment by inserting limbs into moving machinery
- Effect of weather on visibility and working / traffic surfaces
- Transportation of machine including loading / unloading
- Clothing snagged on chute leading into auger
- Limitations to all round visibility
- Overhead obstructions – cables, bridges, power lines, telephone lines
- Public interface – working alongside pedestrians vehicles / plant crossings
- Hazardous substances, e.g. concrete, fuels, oils and greases.

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Plant and equipment minimum standards

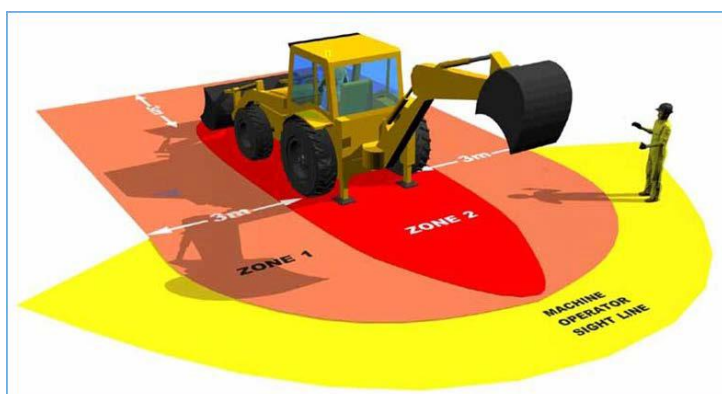
Appendix 1 – Plant safe zones

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

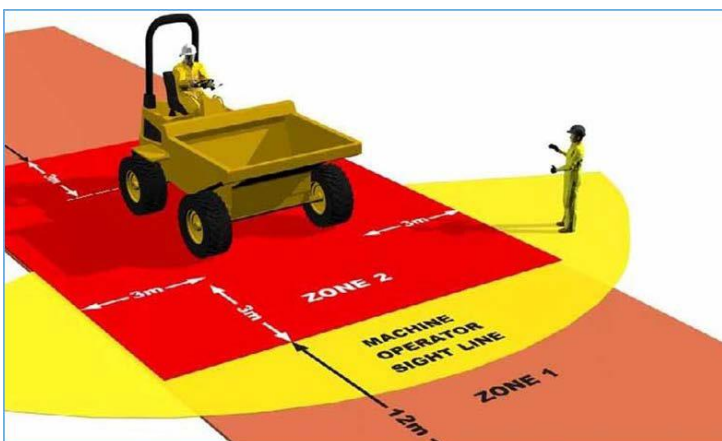
Zone 1	Always signal the plant operator and receive a positive response before entering Zone 1
Zone 2	Keep out of at all times

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.)



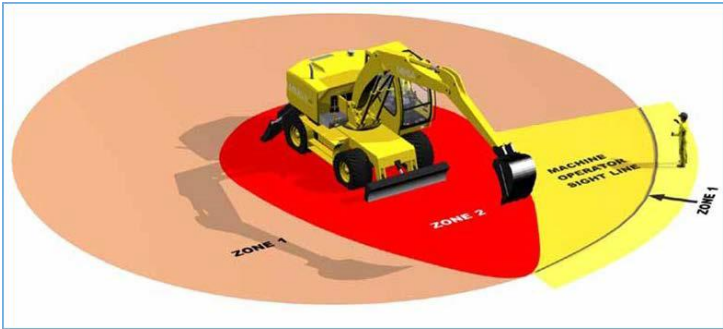
Forward tipping dumper



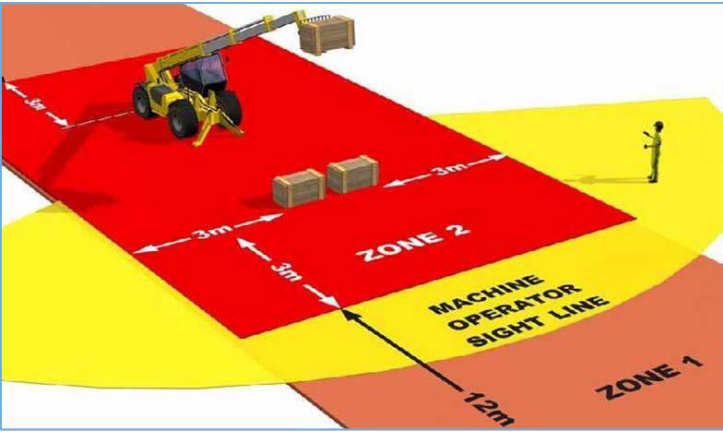
360° tracked excavator

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Plant and equipment minimum standards



360° wheeled excavator



Telehandler

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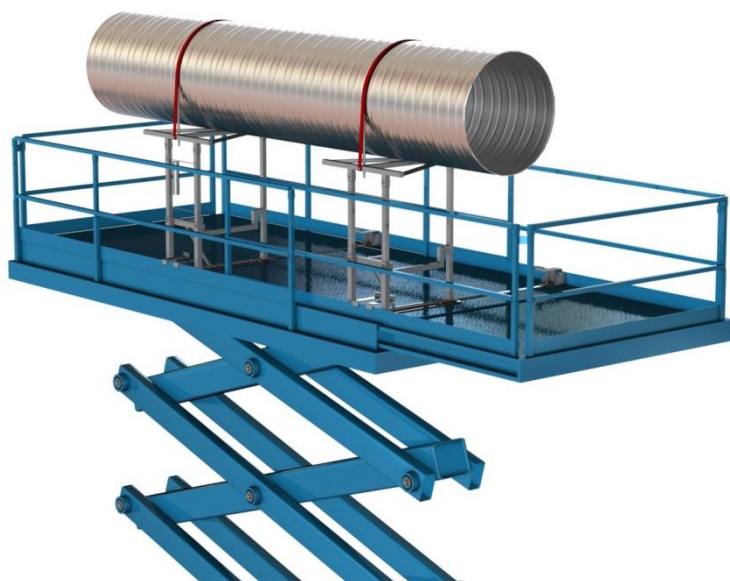
Plant and equipment minimum standards

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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Plant and equipment minimum standards

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)



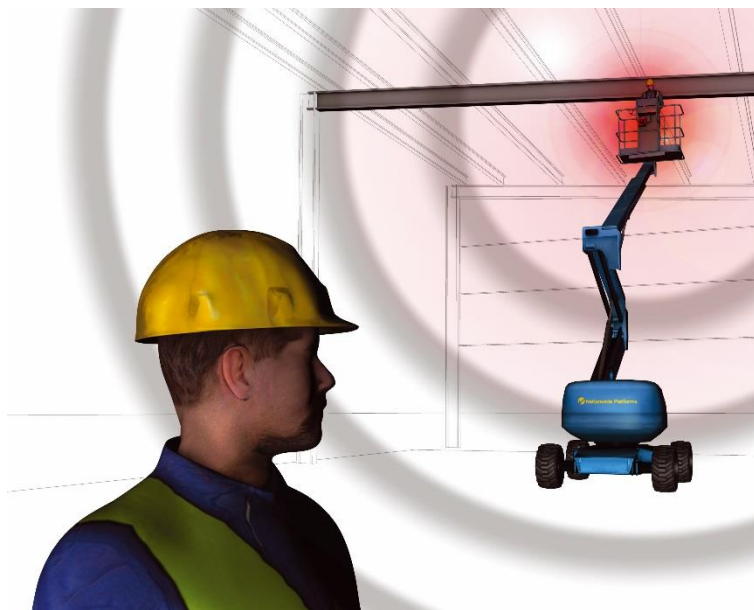
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Appendix 3 – Secondary Guarding Device

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 – PET STD 01a Plant and equipment minimum standards – poster

Plant and Equipment Minimum Standards

MORGAN SINDALL
INFRASTRUCTURE

	Trussable Equipment	180 Degree Excavator	Mini Excavator (up to 8T)	Tracked & Wheeled 360 Degree Excavator (9T and above)	Dual View Dumper (6T and above)	Articulated Dump Trucks (2.5T and above)	Crawler Crane	Mobile Crane	Telehandler	MEWP	Ride on Cabled Compaction Roller	Tracked Dozer	Forward and Side Tipping Dumper (3T)	Vacuum Extractor European Suction Excavator ESE 10/16/26/32T	Site Generators	Tracked Dumper	Spiller Moops	Agricultural Tractor
MANDATORY																		
Competency	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
PFM	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
CEEP/PUWER Legal Standards eg ROPS, FOPS, mirrors, seat belts etc are daily in use in addition to above	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶
360 degree all round vision (cameras)				▶		▶												
Variable track (L-ST)																		
Mass deployment alarm	▶																	
Anti entrapment device										▶								
Work at height protection																		
Collision avoidance system: Front and rear (3T)													▶					
Rear collision avoidance system (> 6T) or rear camera					▶													
Double locking quick hitch (3T)			▶	▶														
Manual/direct attachments quick hitch (3T)			▶															
Height and slew restrictors			▶	▶														
Speed restrictors																		
Reversing/movement alarms ¹					▶	▶		▶		▶		▶		▶				
CEPS compliant (Freight Operating Recognition Scheme), Annual MOT / 12 weekly VOSA inspections																		
DESIRABLE																		
Cabled machine													▶					
Anti entrapment / accessory guarding system / material handling attachments (see spreadsheet in document) - L5033										▶							▶	
360 degree all round vision (cameras)						▶		▶										
360 degree all round vision (cameras) or 360 degree media system									▶									
110v outlets / 230v outlets to be hauled off																▶		
Consideration to use only Stage IIb engines or better		▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶	▶

Environmental Requirements

London and Greater London Area

Engine minimum must comply with Stage IIb European Emission Standards and the HPM (Hazardous Pollutants) / Fines (PM10) Regulations in Central London and Canary Wharf.

Some examples of HPM equipment include generators, construction machinery, mobile cranes and telehandlers.

From 30 September 2015 HPM at net power between 170kW and 180kW used in London will be required to meet the standard set out below. This will apply to both vehicle and road transport engines for both petrol/diesel (Dco) and particulate matter (PM). These standards will be based upon engine emission standards set out in the 2015/2016 (and 2017/2018) emissions. HPM will be used on all new plant development within Greater London will be required to meet Stage IIb of the Directive as a minimum and HPM will be required to meet Stage IIIb of the Directive as a minimum.

From 30 September 2020 the following apply HPM (net power) between 170kW and 180kW will be required to meet Stage IIIb of the Directive, minimum HPM (net power) will be required to meet Stage IIIb of the Directive or Canary Wharf will be required to meet Stage IV of the Directive as a minimum.

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://dgsat.intranet.int/home/mw/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 100kW
- The technology should be available early 2020
- Operators for dual view machines must have completed full product familiarisation training

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