1 Introduction

Back to contents page

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

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

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

Compact plant covers the following items of plant: compaction rollers below 1000mm drum width, mini excavators below 3t, dumpers below 2t, skid steer loaders, and ride-on mowers and All-Terrain Vehicles (ATVs).

Minimum Standards
This section sets out the minimum standards for construction machinery (plant), equipment, tools, and the operator / driver for assets provided by Magnor Plant, our Morgan Sindall Group Plant Hire Desk, and the supply chain. All assets must align with and support our commitment to protecting people and responsible business approach, enabling us to adopt best practice.

Special consideration must be given to plant and equipment operating in London and other low-emission locations regarding the latest engine emission requirements.

This document must be read in conjunction with the SHEQ STD 02 Infrastructure Site Standards.

Engine Emissions

- As a minimum, all plant machinery covered by this Standard should meet European Union (EU) Stage V emissions, and all vehicles registered for road use covered by this Standard should meet EURO 6. Dispensation from these standards must be agreed with the Plant and Transport Director
- Minimum requirements for Greater London (includes London Central Activities Zone and Opportunity Areas (OAs, including Canary Wharf) are as follows:
  - For construction machinery, Non-Road Mobile Machinery (NRMM), EU Stage IV for Greater London
  - Stage IV has not been directly defined for variable speed engines smaller than 56 kW. In most cases, these engines must meet stage V
  - Stage IV has not been defined for machines with constant speed engines such as generators, these machines need to meet Stage V.
  - All machinery to be used within the NRMM Low Emission Zone and with a power rating between 37kW and 560kW must be logged and registered on the NRMM Register. The register is also the only way site operators can get an exemption or approval to use retrofitted or specialist equipment
  - Currently, the requirements only apply to NRMM of net power between 37kW and 560kW
- Some cities may introduce the EU Stage V engine emissions requirement in their air quality standards. For further details, see Appendix C of https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672406/E31_-_Air_Quality_v1.5.pdf
- For more details regarding this legislation and clarification on what equipment falls into scope, please consult https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm

These minimum standards will form part of our expected standards for plant and equipment used by our supply chain partners. In some cases,

Back to contents page

transitional action plans will need to be agreed upon and implemented to achieve the Morgan Sindall Infrastructure minimum standards.

A summary poster can be found in Appendix 8 (being updated).

All mobile plant needs to incorporate the 'Thumbs Up' livery. Toolbox Talks (TBTs) / guidance needs to be completed at all sites demonstrating the concept and best practice relating to 'Thumbs Up' is embedded at all site locations.

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

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

- Vehicle conspicuity
  - Road vehicles fitted with hi-visibility markings in accordance with Chapter 8, Clause O5.2

- Highway maintenance sign
  - The 'HIGHWAY MAINTENANCE' text must be a minimum of **70mm high for temporary traffic management vehicles** and **140mm for all other vehicles carrying personnel or equipment fitted externally on the** rear of each vehicle, in accordance with Chapter 8, clause O5.5.3.

Plant and operators / drivers

- Details provided in Section 2 'General Minimum Requirements' and for each plant item in the pages (below) lists requirements for plant and operators / drivers that may not apply to every situation but must be used when applicable.

Hazards / Risks

- Significant hazards / risks are identified in Section 2 'General Minimum Requirements' and with details provided for each plant item (below); however, the safe operation and use of plant and equipment on site will be subject to a fully documented risk assessment.

Legislation

The document references legislation throughout; 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)

Plant and Equipment Minimum Standards

Back to contents page

- 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.

Back to contents page

2 General Minimum Requirements (two pages)

Introduction

- Information (text) contained in this 'General Minimum Requirements' section (two pages) is relevant to the safe management, operation and use of all plant and equipment – as applicable
- This information has been removed from the text of all items, numbers 3 to 28 inclusive, included in this standard to:
  - Streamline the document
  - Provide a summary listing of 'common' elements relevant to all plant and equipment (as applicable).

General

- All plant and equipment is to be inspected before first use, completing PET FRM 02 – Plant arrival and pre-start check sheet, and daily recorded inspections thereafter
- All hire companies and subcontractors providing their own plant and equipment must demonstrate it is 'fit-for-purpose' through relevant certification, regular planned servicing, and maintenance in line with manufacturers' recommendations
- All plant and equipment must be inspected and recorded on delivery and collection by the appropriate person using PET FRM 02 Plant arrival and pre-start check sheet
- For large mobile plant, once the item has been inspected a 'Plant acceptance sticker' must be placed in visible location to confirm that the item has been checked and how long it has been approved to be on site for. More information on this sticker can be found within the Magnor Plant Best Practice area on Connect here.

Example pictures of the plant acceptance sticker on items of plant.

Legal

- Compliant with current UK legislation
- Compliant with European Commission (EC) Machinery Directive 2006/42/EC, or United Kingdom Conformity Assessed (UKCA) certification, and supplied with a declaration of conformity.

Plant equipment

- Evidence of pre-hire inspection
- Operator instruction manual available with plant or equipment
- Access handrails and steps to be colour-coded, ensuring three points of access
- Fire extinguisher in the cab - Hire companies must be made aware of this at the point of order
- All safety decals in place and legible
- Evidence of regular inspection plus 'next service and or inspection due' date / hours sticker
- Seat belt / belts must be fitted and operational
- Tyres labelled on each side with inflation pressure
- Wheel nut indicators on all wheel nuts unless proved impractical
- If adjacent live lanes are used, control measures must be put in place so that the machine will be prevented from striking passing traffic in the event of operator error.

Back to contents page

Environmental protection

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

Operator / driver (excluding non-working delivery drivers)

- Attend full induction before starting work
- Competency assessment before being put to work – be familiar with plant / equipment
- Complete pre-use check sheet / e-inspection
- Comply with pre-use and defect reporting system
- Evidence of having signed onto the appropriate Safe System of Work (SSoW) documentation for the task
- Be briefed on the site-specific Plant, Vehicle and People Management Plan (PVPMP) and check for overhead obstructions and hazards
- Always operate / use plant and equipment in accordance with the manufacturer's instructions / recommendations and consider weather and ground conditions
- Engine must be turned off and keys removed from ignition before leaving the vehicle unattended
- Operator to mount and dismount machine using fixed access arrangements and always face the machine using three points of contact
- Operator to stop work if the event of unauthorised personnel entering exclusion zones
- Report all unsafe conditions, defects, and behaviours to your supervisor
- Where the vehicle or mobile plant utilised on site must be driven on the public highway, the driver / operator must hold a current valid driving licence with the appropriate category for that vehicle / mobile plant
- Full site-defined PPE required if outside cab – non-loose-fitting PPE is required in all cases to avoid catching on controls
- Additional PPE to be worn as defined by risk assessment specific for the task to be undertaken.

Non-working delivery drivers on site outside the cab

- Full site-defined PPE.

Training and competency requirements

- A current competence card (or equivalent training accepted by Morgan Sindall Infrastructure) is required for all plant machinery, vehicles or equipment being used
- A listing of competence cards / training is included in Appendix 5.

Hazards / risks

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

- Accessing the cab / refuelling and maintenance
- Clothes can get snagged on controls before the release of the servo isolator / safety handle
- Danger of crushing in slew zone
- Effect of weather on visibility and working / traffic surfaces
- Fire
- Hazardous substances such as fuels, oils, and greases
- Limitations to all-round visibility / restricting operator vision
- Overhead obstructions – cables / bridges / power lines / telephone lines
- Plant and personnel interface
- Public interface – working alongside pedestrians / vehicles / plant crossings

Plant and Equipment Minimum Standards

Back to contents page

- Transportation including loading / unloading
- Environmental considerations – refer to the project environmental management plan.

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

2.1 Index listing (A to Z) of acronyms used

Back to contents page

ACRONYM	Full phrase or title
ALLMI	Association of Lorry Loader Manufacturers & Importers (UK)
ATV	All-terrain Vehicle
ALO	Any Line Open
BORDA	British Off Road Driving Association
BS	British Standard
CCTV	Closed-Circuit Television
CE	Conformité Européene
CFA (piling)	Continuous Flight Auger
CLOCS	Construction Logistics and Community Safety
COSHH	Control Of Substances Hazardous to Health
CPA	Construction Plant-hire Association
CPC	Certificate of Professional Competence
CPCS	Construction Plant Certification Scheme
CSCS	Construction Skills Certification Scheme
DC	Direct Current
DPF	Diesel Particulate Filters
DTH (piling)	Down The Hole
DTU	Digital Thumbs Up
DVS	Direct Vision Standard
DVSA	Driver Vehicle Standards Agency
EA	Environment Agency
EC	European Commission
EU	European Union
EUSR	Energy & Utility Skills Register
FLS	Frontline Supervisors
FOPS	Falling Object Protective Structure
FORS	Fleet Operator Recognition Scheme
FTA	Freight Transport Association
GB	Great Britain
GMR	General Minimum Requirements (Section 2)
GPS	Global Positioning System
GS6	General Series 6 (Avoiding danger from overhead power lines)
GVW	Gross Vehicle Weight
HAVS	Hand Arm Vibration Syndrome
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
IMS	Integrated Management System
INDG	(HSE) Industry Guidance
IPAF	International Powered Access Federation
ISO	International Organisation of Standardisation
JCB	Joseph Cyril Bamford Excavators Ltd
kg	Kilogramme
km	Kilometre
kVA	kilovolt-ampere – (A kilovolt-ampere (kVA) is 1000 volt-amperes. Electrical power is measured in watts (W): The voltage times the current measured each instant)
LA(AP)	Lifting Appliance (Appointed Person)
LDP	Large Diameter Pile
LED	Light Emitting Diode (an electronic light source that uses a semiconductor)
LOLER	Lifting Operations and Lifting Equipment Regulations
MEWP	Mobile Elevating Work Platform
MLD	Movement Limiting Device
MOT	Ministry Of Transport
NOCN	National Open College Network
NDT	Non-Destructive Testing
NPORS	National Plant Operators Registration Scheme
NRMM	Non-Road Mobile Machinery Defined as any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road
OAs	Opportunity Areas
OEM	Original Equipment Manufacturer

MORGAN SINDALL INFRASTRUCTURE

Plant and Equipment Minimum Standards

ACRONYM	Full phrase or title
OND	Outdoor Noise Directive
OPS	Operator Protective System
OND	Outdoor Noise Directive
OTP	On-Track Plant
PAT	Portable Appliance Test
PET STD	Plant Equipment and Transport Standard
PPE	Personal Protective Equipment
PPI	People Plant Interface
PPM	Planned Preventative Maintenance
PUWER	Provision and Use of Work Equipment Regulations
PVPMP	Plant, Vehicle and People Management Plan
RAL	Reichs-Ausschuß für Lieferbedingungen und Gütesicherung – A European colour matching system
RAMS	Risk Assessment Method Statement
RCBO	Residual Current Circuit Breaker with Overcurrent protection
RCD	Residual Current Device
RCI / RCL	Rated Capacity Indicator / Rated Capacity Limiter
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
ROPS	Roll Over Protective Structure
RtB	Raising the Bar
RTITB	Road Transport Industry Training Board
SEPA	Scottish Environment Protection Agency
SMSTS	Site Management Safety Training Scheme
SSoW	Safe System of Work
SSSTS	Site Safety Supervisor Training Scheme
STGO (requirements as per CPA TIN 104)	Special Types General Order – (CPA = Construction Plant-hire Association, and TIN 104 = Requirements for In-service Performance Testing of the Chassis Brakes of Mobile Cranes Operating Under STGO)
SWL	Safe Working Load
TBT	Toolbox Talk

ACRONYM	Full phrase or title
TIN	Technical Information Notice
TM	Traffic Management
TOPS	Tip Over Protection Structure
UK	United Kingdom
UKCA	United Kingdom Conformity Assessed
UNECE	United Nations Economic Commission for Europe
UTV	Utility Vehicle
VED	Vehicle Excise Duty (UK road tax)
VIN	Vehicle Identification Number
VMS	Variable Message Signs
SA	Vehicle and Operator Services Agency
WAH	Work At Height(s)

Back to contents page

2.2 Rail specific - Working Plant with Any Line Open (ALO)

Back to contents page

When operating plant with the adjacent line open or ALO, the following specification must apply where working within four metres of an open line:

- Lifting equipment must be fitted with a Rated Capacity Indicator/Limiter (RCI/L) with a high-performance Movement Limiting Device (MLD) that has Network Rail product acceptance
- Where lifting equipment is utilised, a blue light must be mounted on the roof, which indicates when the RCI/L is in 'lift mode'
- Where no lifting equipment is provided, a high-performance MLD that has Network Rail product acceptance must be fitted
- The MLD must have virtual wall technology (zoning), any angular limiters disabled, and a travel inhibit / track lock facility
- The MLD must have a locking facility to reduce the likelihood of the operator overriding the safety system and changing the settings once agreed
- The green and orange roof-mounted beacons must be isolated or shielding erected to prevent distraction to train drivers
- A roof-mounted magenta light is to be fitted, which indicates the operator has set a virtual wall and the system is active and locked
- A remote control cut-off switch that interacts with the plant must be fitted.

Please contact the ALO champion for further guidance or assistance to modify existing plant guidance.

3 Tools

Back to contents page

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to details relating to tools contained below.

Minimum requirements – plant

General

- All tools (petrol / diesel / air / battery / electric (110v and 230v) / hydraulic) must be inspected prior to first use and the appropriate pre-start check completed and daily inspections thereafter
- Pre-use visual inspections must be completed
- Cables and connection fitments are to be inspected before use.

Minimum requirements – operator

- Product familiarisation and appropriate training, with proof of training for the tool / equipment being used
- Operator understanding of stop-start procedures
- Be familiar with Hand-Arm Vibration Syndrome (HAVS) monitoring requirements. A monitoring system must be in place to record exposure / trigger times for tool use. It is recommended that an individual wear a full electronic HAVS monitor, e.g., Reactec. Major tool suppliers provide information on vibration and productivity for each of their products online.

Hazards / risks

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

- Correct procedure for fitting blades, i.e., Stihl saw
- Dust
- Emissions from material or work being undertaken
- Guards fitted and being used correctly
- HAVS
- Lack of appropriate PPE
- Lack of training / supervision
- Other work activities in the same area
- Noise
- Sparks
- Use of accessories and how they are attached / inspected, such as blades.

Back to contents page

3.1 Powered hand tools

Battery-powered or electric hand tools are our preferred option on all sites as part of our commitment to being a responsible business and achieving our net-zero carbon emission goals.

The preferred battery-powered hand tools for common items are available via the All Together Site Solutions desk. Click on the tiles to view each poster

Breaking & Drilling

Cutting & Grinding

Fastening & Crimping

To use less sustainable powered tools, i.e., petrol and diesel, the project must have demonstrated that all alternative options have been reviewed / assessed and that the less sustainable option is the only viable option / safest solution.

Rotating blades – additional requirements
Rotating blades include:

- Circular saws
- Chop saws
- Reciprocating saws
- Angle grinders
- Disc cutters
- Petrol and battery cut-off saws.

Handheld tools with spinning or moving blades present an elevated risk of cuts or lacerations.

Handheld tools - Rotating Blades standard (PET STD 08) and Handheld tools – Rotating Blades permit (PET FRM 07).

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirement – plant

- **General**
  - Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
  - Evidence of Pre-hire inspection
  - Evidence of regular inspection plus 'next service and or inspection due' date sticker
  - Operator instructions must be with the machine
  - All safety decals are in place and legible.

- **Specific**
  - Compliance with (RoHS) Regulations 2012
  - Compliance with BS EN 61340-5-1:2007 electrostatic control standards
  - Must have a valid Portable Appliance Test (PAT) label
  - All guards to be in place and functioning correctly
  - HAVS magnitude, noise emission level and weight to be displayed
  - Reduced vibration handles
  - All tools must be double insulated.

Minimum requirements – operator

- **General**
  - Attend full induction before starting work
  - Be signed onto the appropriate SSoW documentation for the task
  - Complete Pre-Use check sheet / e-inspection
  - Comply with Inspection and Defect Reporting System
  - Have a competency assessment before being put to work – be familiar with the machine
  - Report all unsafe conditions
  - **Always operate / use the equipment in accordance with the manufacturer's instructions / recommendations.**

- **Specific**
  - Must be able to demonstrate they are fit for work
  - Full site-defined PPE must be worn – loose-fitting clothing must be avoided to prevent inadvertent operation of controls
  - Must be suitably trained and competent in the use of this type of equipment
  - Be familiar with specific HAVS action levels for equipment being used
  - Must comply with the HAVS management system
  - Ensure visual inspection for damage is carried out before each use
  - Ensure subsequent PAT is carried out as per site requirements
  - Disconnect tools when not in use and when changing accessories such as blades, bits, etc.

Back to contents page

Hazard identification

- Powered hand tools contain several inherent hazards which can be compounded through environmental factors on our work sites
- They fall under the PUWER, which should ensure that tool design mitigates some of the inherent hazards if used and maintained.

Inherent hazards

1. Electricity
2. Equipment weight and dimension
3. Heat build-up and hot surfaces
4. Noise
5. Potential and stored energy
6. Rotating equipment (hand, finger, and arm injuries)
7. Projectiles.

Environmental hazards

8. Availability of power sources
9. Dust (in the area of use and generated in operation)
10. Ergonomics of the work location
11. Hazardous / flammable environments
12. Materials to be drilled
13. Use in slippery / wet conditions
14. Use in poor light conditions
15. Vibration.

Plant and Equipment Minimum Standards

Back to contents page

To help minimise the risks associated with the above hazards, the following minimum standards for the selection of powered hand tools are recommended:

6. Rotating equipment 7. Projectiles	**Must** be fitted with a chuck and bit guard. (These can often be referred to as dust extraction systems). **Must** be fitted with Active Torque Control (ATC), where applicable. **Must** have over-run limited switch (active braking system).
1. Electricity 3. Heat build-up	Preferably Direct Current (DC) battery powered. • Battery design should include active condition monitoring.
5. Potential and stored energy	**Must** be fitted with two-hand handles and grips. **Must** have a 'Dead Man' switch and/or torque limited.
2. Equipment weight	Select appropriate to need and situation use. • Consider augmenting lifting using exoskeleton support systems • Consider adding the associated proprietary tethering system.
4. Noise 15. Vibration	**Must** be fitted with an active vibration reduction (AVR) system.
14. Low-light equipment	**Must** be fitted with Light Emitting Diode (LED) work light.

3.2 Battery charging station (Lithium-Ion batteries only)

Back to contents page

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirement – plant

- Certified to:
  - EN 11056
  - NEN 1568 for A, B, D & F fires
  - NTA8133-2021
  - EN 3-7+A1:2007 & NF074.
- Localised automatic fire suppression
- Certified to IP55 (internal and external unit)
- RCD individually protected sockets
- External power isolator switch, independent of climate control and emergency alert systems
- Thermostatic heater and ventilation system to ensure battery charging station works at optimum levels
- Power cut off when internal temperature reaches 60º or more
- Visual and audible alarms (fire, gas, and smoke detection)
- Clear and visible safety signage
- Mobility - crane lifting eyes, forklift pockets for ease of manoeuvrability.

Minimum requirements – operator

- Product familiarisation training
- Weekly visual inspection for damage undertaken by a competent individual. They must check functionality and fire suppression hoses within each locker compartment
- Check that all batteries have been removed before moving or lifting
- Fire suppression system is fully serviced every 12 months by a competent engineer with relevant BAFE SP101 qualifications or equivalent
- Five-year fire suppression inspection by manufacturer and replace all fire detection tubes within the unit
- Ten-year fire suppression inspection by manufacturer and replacement of the fire suppression.

MORGAN SINDALL INFRASTRUCTURE

Plant and Equipment Minimum Standards

Back to contents page

Hazards / risks

- Fire
- Overheating
- Lifting
- Electrical.

4 Generators and battery power

Hybrid or battery options are our preferred solution on all sites as part of our commitment to being a responsible business and achieving our net-zero carbon emission goals.

Electrical Procedure 10 - Generators (SH4 STD 01 EP10) define the electrical requirements for all generators.
The following forms must be used for all types of generators:

- PM FRM 36 Generator On Hire checks
- PM FRM 36a Generator Weekly - Quarterly checks.

4.1 Portable battery power (110v)

Back to contents page

Battery technology must always be considered over diesel- or petrol-fuelled solutions.

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Minimum requirement – plant

- Certified to IP54 (Instagrid product only)
- Output voltage 110v
- 13 amp / 230v input charging
- Zero emissions
- Operate indoors and outdoors in all weathers (operating temperatures circa -20ºC to 60ºC) – Instagrid product only
- Robust roll cage or suitable ergonomic design to support safe manual handling.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements – operator

- Product familiarisation training to incorporate pre-use check
- Weekly visual recorded inspection for damage undertaken by a competent individual
- Always operate / use the equipment in accordance with the manufacturer's instructions.

Desirable

- Telemetry and GPS tracking.

Hazards / risks

- Electric shock
- Manual handling
- Milwaukee MX Fuel power supply product suitable for indoor use only.

4.2 Petrol Generator <10kVA

Petrol-powered site generator with a maximum output of 10kVA.

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirements – plant

- 110v outputs must be centre-tapped to earth. The phase earth voltage must not exceed 63.5v
- Electric start for generators above 4kVA
- Frame mounted up to 3kVA, Trolley mounted above 3kVA
- Isolation switch key for generators above 5kVA
- Non-armoured extension cables must not be used on voltages above 110v
- Switchable dual voltage (110v / 230v) 32 and 16amp outlet sockets protected by 30mA residual circuit breaker
- 110v only outlets or 230v outlets must be blanked off
- The use of these generators must comply with the Health and Safety Executive (HSE) guidance 'Electrical Safety on Construction Sites'
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See Integrated Management System (IMS))
- Where the generator does not comply with the above, an isolating tool transformer may be used in conjunction with the generator.

Back to contents page

Minimum requirements – operator

- Must have completed a product familiarisation briefing
- Abide by specific Morgan Sindall Infrastructure company policies, procedures and permits
- Always operate / use the equipment in accordance with the manufacturer's instructions
- Ensure the generator has adequate ventilation
- The Residual Current Device (RCD) operation must be checked before first use and after each time the generator is moved.

Desirable

- Additional fume extraction system – Hire companies must be made aware at the point of order
- Drip tray or plant nappy to be used in conjunction with the generator
- Trolley mounted.

Hazards / risks

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

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

4.3 Diesel Generators <20kVA

Diesel-powered site generator with a maximum output of 20kVA.

These generators must be earthed in compliance with the Earthing Best Practice Guidance (SH4 GUID 02).

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirement – plant

- 110v 64, 32, and 16 amp outlet sockets only (unless the unit is utilised to power temporary accommodation). RCD set to 30m/amps – 30m/secs and tamper-proof sticker in place
- Electric start
- Isolation switch with key
- Fitted with permanent / integral lifting eye, no LOLER requirement
- Fitted with a central lifting eye, LOLER inspection required
- Must have a voltmeter and hour metre
- Non-armoured extension cables must not be used on voltages above 110v. Recommend each installation is fully certified by an individual qualified to 2391-52
- The use of these generators must comply with HSE guidance 'Electrical Safety on Construction Sites'
- Lifting weight to be clearly displayed on all generators
- All trailer-mounted generators to display towing weight
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See IMS). Any subcontractor working on behalf of Morgan Sindall or the power provider will comply fully with Morgan Sindall rules for electrical safety unless these have been superseded in current guidance, at which point, they must review in cooperation with Morgan Sindall before proceeding in an agreed manner
- EU Stage V Certified engine, stamped with durable marking according to Stage V Regulation
- Full telemetry must be available on each piece of equipment to enable remote access to the equipment. This will demonstrate its operating performance and/or diagnostics, ensure optimal condition of the fleet, confirm 'right-sizing' of the fleet and reduce the risk of breakdown or premature failure
- Emergency stop button – each generator must be fitted with an e-stop button. If the generator is supplied in a vandal-proof box, a secondary e-stop button is required externally

Back to contents page

- Each generator must have a full RCD test as part of the PDI
- All generators and external fuel tanks must be fully bunded to 110% capacity of the internal fluids
- Must be supplied with an earthing rod
- When supplying items other than portable tools, specific earthing requirements must be checked by a competent person
- Where the generator does not comply with the above, an isolating tool transformer may be used in conjunction with the generator.

Minimum requirements – operator

- Must have completed a product familiarisation briefing
- Abide by specific Morgan Sindall Infrastructure company policies, procedures and permits
- Always operate / use the equipment in accordance with the manufacturer's instructions
- Ensure the generator has adequate ventilation
- The RCD operation must be checked before the first use and after each time the generator is moved.

Desirable

- Additional fume extraction system - Hire companies must be made aware at the point of order
- Drip tray or plant nappy to be used in conjunction with the generator
- Auto start / hybrid / smart stored energy system, e.g., Battery Storage Units (BSU), solar solutions
- Trailer or skid mounted.

Hazards / risks

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

- 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 the engine is hot, running and do not overfill with fuel
- Electric shock.

Back to contents page

Back to contents page

4.4 Diesel Generators >20kVA

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

These generators must be earthed in compliance with the Earthing Best Practice guidance (SH4 GUID 02).

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirement – plant

- 110v 64, 32 and 16 amp outlet sockets only (unless the unit is utilised to power temporary accommodation). RCD set to 30m/amps – 30m/secs and tamper-proof sticker in place
- Automatic voltage regulator
- Electric start
- Emergency stop button - each generator must be fitted with an e-stop button. If the generator is supplied in a vandal-proof box, a secondary e-stop button is required externally
- Engine protection shutdown system with warning lights
- Fuel level gauge
- Isolation switch with key
- Fitted with permanent / integral lifting eye, no LOLER requirement
- Fitted with a central lifting eye, LOLER inspection required
- Must have RCD or Residual Current Breaker with Over-current (RCBO) protection
- Must have a voltmeter and hour metre
- Non-armoured extension cables must not be used on voltages above 110v. Recommend each installation is fully certified by an individual qualified to 2391-52
- Silencing pack
- The use of these generators must comply with HSE guidance 'Electrical Safety on Construction Sites'
- Lifting weight to be clearly displayed on all generators
- All trailer-mounted generators to display towing weight
- Voltmeter with phase-to-phase selector switch
- When operating / installing these machines site must comply with Morgan Sindall rules for electrical safety (See IMS). Any subcontractor working on behalf of Morgan Sindall or the power provider will comply fully with Morgan Sindall rules for electrical safety unless these have been superseded in current guidance. At that point, they must review in cooperation with Morgan Sindall before proceeding in an agreed manner

Plant and Equipment Minimum Standards

Back to contents page

- Must be supplied with an earthing rod
- EU Stage V Certified engine, stamped with durable marking according to Stage V Regulation
- Full telemetry must be available on each piece of equipment to enable remote access, thus demonstrating its operating performance and/or diagnostics. This will ensure the optimal condition of the fleet, confirm the 'right-sizing' of the fleet and reduce the risk of breakdown or premature failure
- Each generator must have a full RCD test as part of the PDI
- All generators and external fuel tanks must be fully bunded to 110% capacity of the internal fluids.

Minimum requirements – operator

- Must have completed a product familiarisation briefing
- Abide by specific Morgan Sindall Infrastructure policies, procedures and permits
- Always operate / use the equipment in accordance with the manufacturer's instructions
- Ensure access to the generator is restricted to authorised qualified persons only
- Ensure the generator has adequate ventilation
- Must be qualified and competent to carry out electrical connection activities if installing a generator
- The RCD operation must be checked before the first use and after each time the generator is moved.

Desirable

- Additional fume extraction system - Hire companies must be made aware at the point of order
- Automatic refuelling system from external fuel tank
- Bund level alert system
- Drip tray or plant nappy to be used in conjunction with the generator
- Paired with an auto start / hybrid / smart stored energy system, e.g., BSU and solar solutions.

Hazards / risks

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

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

Back to contents page

5 Towable Equipment

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirement – plant

- All towable equipment must be fitted with a towing eye, not a ball-hitch configuration.

Inspection regime

- Inspections to be carried out by supplier / provider representative
  - Examples of towable equipment include compressors, tower lights, Variable Message Signs (VMS), mobile (towable) welfare units, site, and highway (towed) bowsers
- Frequency of inspections for each item (towable equipment) to be determined by respective site teams following discussions with supplier / provider on the intended use
  - Items which are regularly towed on the public highway (daily / weekly) must be inspected every 12 weeks
  - Items that are predominantly static or only towed infrequently onsite (i.e., not regularly towed on the public highway) must be inspected every 26 weeks.

General / operator pre-use checks

- All towable compressors or air systems must come supplied road-legal and fitted with integral fuel bunding for environmental protection
- Checks on wheel nuts and wheel nut indicators
- All lighting towers must come supplied complete with mast deployment alarm and safety system
- Breakaway cable
- Drawbar assembly braking systems and towing eye
- Equipment securing devices
- Floor access and access ramp
- Full wheel bearings inspected to be completed every 12 months (minimum)
- Jockey leg / wheel
- Lights
- Tyre depth and condition
- Whip checks to be provided between the hose and compressor and the hose and tools.

Minimum requirements – operator

- Must be suitably trained and must have the correct driving licence category in the use of towing equipment and for the host vehicle / item of plant
- Competency assessment before being put to work – be familiar with the towing equipment to be used.

Hazards / risks

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

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

5.1 Towable Tower Lights (TRIME X-Eco hybrid lithium battery and Generac V20 Pro Lithium)

Full solar-powered lights are also acceptable on our sites and must comply with the standards set out below.

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirement - plant

- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Overrun Braking system
- 40mm towing eye
- Break away cable
- Suitable number plate holder to facilitate quick changeover and security of attachment
- Wheel nut indicators
- Labelled each side with tyre inflation pressure
- Jockey wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Maximum age: Five years
- Must be fitted with an AMOSS system (Mast will descend once the handbrake is released)
- Approved manufacturers: Trime, Generac (V20 pro model only)
- 5m mast indicator
- LED towing lights, instead of bulbs, must be able to work with towing vehicles without the need for retrofit resistor packs.
- Full telematics system.

Minimum requirements - operator

- Must be able to demonstrate they are fit for work
- Must have correct driving licence category for towing
- Ensure the mast interlock system is working correctly
- Ensure the roadworthiness of the trailer
- Ensure the correct registration number is displayed on the rear of the trailer
- Ensure that the towing vehicle and trailer does not exceed rated capacity
- Full site-defined PPE must be worn – loose-fitting clothing must be avoided to prevent inadvertent operation of controls
- Position lighting heads suitably so as not to cause a glare hazard

Back to contents page

Plant and Equipment Minimum Standards

Back to contents page

- Ensure any exclusion zones are observed for overhead structures and utilities
- Ensure appropriate exclusion zones are established if used near overhead utilities or structures.

Desirable - plant

- Security wheel clamps
- Tow hitch lock.

Hazards / risks

- Light glare from un-shielded lighting
- Overhead obstructions
- Slips, trips, and falls from trailing power leads
- Electric shock
- Burns from hot surfaces
- Manual handling
- Uncontrolled movement (rolling away)
- Do not use if the equipment is, or appears to be damaged
- Only to be erected on firm-level ground
- Light must not be moved if the mast is erected
- Do not load / unload on sloping ground.

5.2 Road and site-based cable drum trailer (1t to 50t)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Supplied with lights and, if used on the public highway - compliance with C&U regulations (indicators, registration plates, etc.)
- Manual applied parking brake
- **Above 3.5t** - Air applied service twin line braking system incorporating failsafe spring applied braking
- Towing eye coupling only
- Tow hitch breakaway cable where applicable
- Suitable non-slip floor, where applicable
- Mudguards with anti-slip surfaces suitable for personnel to step on and where access is required at height, an appropriate system must be in place to prevent falling from height
- Suitable jockey leg / wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Hydraulic power pack – located away from operator position to minimise noise exposure. Ideally, noise output must be as low as possible, less than 85dbA for trailers 20t and above, where applicable
- Manual release system of hydraulic controls that will permit the safe lowering of the cable drum in the event of an engine failure
- All controls sufficiently labelled to indicate the purpose
- Dedicated lifting points to enable un-laden whole trailer lift guards for moving parts and signage for all potential pinch points
- Must be able to accept spindle suitable for drum size and weight
- Anti-burst and anti-whip hose protection must be included for all hydraulic hosing
- **Trailers 8t and above**
  - Hydraulically operated drum braking system capable of controlling the drum rotation speed (10m/min maximum) and stopping the drum

Back to contents page

Back to contents page

- Emergency Stop points at locations including adjacent to the power pack and operator controls
- Flashing LED amber beacons must be included
- Lateral and rear underrun protection must be included where applicable
- Wheel chocks (minimum four) to be supplied and a suitable storage provision when not in use
- Wheel nut indicators
- Labelled each side with tyre inflation pressure and wheel nut torque figure
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of pre-hire inspection
- Evidence of regular inspection
- Operator instructions must be with the machine
- All safety decals are in place and legible.

Additional requirements 20t and above

- Air-applied service twin-line braking system incorporating failsafe spring-applied braking
- Where access is required at height, a suitable system must be in place to prevent falling from height
- Additional work lights for loading and unloading the cable drum
- Convex mirror mounted on the trailer frame, on the opposite side to the control leavers
- Hydraulic rotation and braking device with sufficient braking force to stop drum rotation
- Guards for moving parts and signage for all potential pinch points
- Must be able to accept spindle / pintle suitable for drum size and weight
- Winch to control adjusting the height of the towing A-frame
- Compensating / adjustable towing coupling to allow a range of towing connection heights
- Movement Orders are required (see Morgan Sindall Fleet team) when using the trailer(s) on the highway.

Minimum requirements - operator

- Must be able to demonstrate they are fit for work
- Must have correct driving licence category for towing
- Ensure the worthiness of the trailer
- Load positioning – ensure it is correctly positioned to prevent nose overload
- Load security – load must be secured by approved methods
- Ensure that the towing vehicle and trailer does not exceed rated capacity
- Attend full induction before starting work
- Undertaken familiarisation training on the type of equipment
- Always operate / use the equipment in accordance with manufacturer's instructions / recommendations
- Complete pre-use check sheet / inspection.

Hazards / risks

- Stability during loading and unloading
- Insecure load
- Overloading
- Manual handling
- Working at height
- Maintain the 4m exclusion zone as appropriate
- Implement sufficient control measures to protect members of the public
- Ensure that good housekeeping is applied, and trailer / vehicle are kept clean and tidy
- Do not use if the equipment is or appears to be damaged or is in an un-roadworthy condition
- Do not load / unload on sloping ground
- Not to be used in an overloaded state
- Ground conditions must be suitable for the use of the loaded trailer.

5.3 Towable and tracked winches

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- 12-monthly thorough inspection
- 12-monthly calibration
- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Drive and spooling drum guards must be fitted
- Overrun braking system
- 40mm towing eye
- Break away cable
- Mudguards
- Wheel nut indicators
- Labelled each side with tyre inflation pressure and wheel nut torque figure (riveted plate)
- Jockey wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Anchor legs to be fitted, where applicable
- Electric start ignition system
- Emergency stop fitted within easy access
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of pre-hire inspection
- Evidence of regular inspection
- Operator instructions manual included
- All safety decals in place and legible
- A suitable number plate holder to facilitate quick changeover and attachment security
- Tracked machines must be fitted with a wireless remote control to operate the tracks (wander lead)
- Tracked machines must be fitted with a flashing amber beacon.

Back to contents page

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- Must be able to demonstrate they are fit for work
- Must have correct driving licence category for towing
- Operators must be trained and competent and completed familiarisation training
- Ensure the roadworthiness of the trailer
- Ensure that the towing vehicle and trailer does not exceed rated capacity
- All hoses to be inspected regularly
- Attend full induction before starting work
- Complete pre-use check sheet / e-inspection
- Always operate / use the equipment in accordance with the manufacturer's instructions / recommendations.

Desirable - plant

- Wheel chocks
- LED lights, instead of bulbs, should be able to work with the towing vehicle without the need for retrofit resistor packs
- Diagram on each trailer showing how wheel nut indicators should be orientated
- Seal life bearings instead of taper bearings are used.

Hazards / risks

- Danger of entanglement / entrapment on moving winch reels
- Risk of movement during operation if not secured to the anchor point sufficiently
- Maintain the 4m exclusion zone as appropriate when being operated
- Implement sufficient control measures to protect members of the public
- Ensure that good housekeeping is applied, and trailer / vehicle are kept clean and tidy
- Do not use if the equipment is or appears to be damaged or is in an un-roadworthy condition
- Do not use unless trained in the operation of this winch
- This type of winch is a hauling / pulling winch and must not be used for lifting operations.

5.4 Pipe coil trailer

(For carrying pipe coils from 125 mm to 180 mm)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Overrun Braking system
- 40mm towing eye
- Break away cable
- A suitable number plate holder to facilitate quick changeover and attachment security.
- Wheel nut indicators
- Labelled each side with tyre inflation pressure and wheel nut torque figure
- Jockey wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Wheel Stud configuration minimum of 5 x M12 stud on a 5.5" PCD Hub
- Where the maximum loaded trailer height exceeds 3.66 m, a maximum height notice must be displayed prominently on the trailer
- Supplied with ratchets trap assemblies and pipe end restraining clamps permanently fixed to the frame
- Must be supplied with a device for removing stored energy from the pipe coil during the pipe deployment operation
- Must be supplied with fixed side guards to protect the operators from inadvertent pipe coil stored energy release, and guards must be provided to safeguard operators on both sides of the trailer
- Supplied with pipe re-rounding tool appropriate for the size of pipe being used (this can be combined with the device for removing stored energy).

Minimum requirements - operator

- Must be fit for work
- Must have correct driving licence category for towing
- Ensure the roadworthiness of the trailer
- Ensure the correct registration number is displayed on the rear of the trailer

Back to contents page

Back to contents page

- Load positioning – ensure the load is correctly positioned to prevent nose overload
- Load security – load must be securely tied down by approved methods
- Ensure that the towing vehicle and trailer does not exceed rated capacity
- Trained in the use of coil trailers.

Desirable - plant

- Nose weight indicator
- Security wheel clamps
- Tow hitch lock
- LED lights, instead of bulbs, should be able to work with the towing vehicle without the need for retrofit resistor packs.
- Wheel chocks
- Diagram on each trailer showing how wheel nut indicators should be orientated
- Seal life bearings instead of taper bearings are used.

Hazards / risks

- Stability during loading and unloading
- Risk of stored energy from coiled pipe end during discharge and strap cutting
- Cutting retaining straps out of sequence could lead to unexpected release of stored energy
- Public interface – working alongside
- Ensure that good housekeeping is applied, and trailer / vehicle are kept clean and tidy
- Do not use if the equipment is or appears to be damaged or is in an un-roadworthy condition
- Do not load / unload on sloping ground
- Not to be used in an overloaded state.

Back to contents page

5.5 Capstan winches

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- 12-monthly thorough inspection
- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Drive and spooling drum guards must be fitted
- Overrun Braking system
- 40mm towing eye
- Break away cable
- Mudguards
- Wheel nut indicators
- Labelled each side with tyre inflation pressure and wheel nut torque figure (riveted plate)
- Jockey wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Anchor legs to be fitted, where applicable
- Electric start ignition system is required
- Emergency stop fitted within easy access
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of pre-hire inspection
- Evidence of regular inspection
- Operator instructions manual included
- All safety decals in place and legible
- A suitable number plate holder to facilitate quick changeover and attachment security.

Minimum requirements - operator

- Must be able to demonstrate they are fit for work
- Must have correct driving licence category for towing
- Operators must be trained and competent and completed familiarisation training
- Ensure the roadworthiness of the trailer

Back to contents page

- Ensure that the towing vehicle and trailer does not exceed rated capacity
- All hoses to be inspected regularly
- Attend full induction before starting work
- Complete pre-use check sheet / e-inspection
- Always operate / use the equipment in accordance with the manufacturer's instructions / recommendations.

Desirable - plant

- Wheel chocks
- LED lights, instead of bulbs, should be able to work with the towing vehicle without the need for retrofit resistor packs
- Diagram on each trailer showing how wheel nut indicators should be orientated
- Seal life bearings instead of taper bearings are used.

Hazards / risks

- Danger of entanglement / entrapment on moving winch reels
- Risk of movement during operation if not secured to the anchor point sufficiently
- Maintain the 4m exclusion zone as appropriate when being operated
- Implement sufficient control measures to protect members of the public
- Ensure that good housekeeping is applied, and trailer / vehicle are kept clean and tidy
- Do not use if the equipment is or appears to be damaged or is in an un-roadworthy condition
- Do not use unless trained in the operation of this winch
- This type of winch is a Hauling Winch and must not be used for lifting operations.

5.6 Site Tow Bowser

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

General

- Trailer-mounted water / fuel bowser with a capacity of 1,000 – 13,500l.

Minimum requirements - plant

- 12v electric / petrol / diesel driven dispensing pump (Solar powered fuel dispensing, where possible)
- 40mm towing eye
- Automatic shut-off nozzle
- Fuel bowsers must be bunded 110 per cent (double bunded)
- Fuel / water level gauge
- Handbrake / wheel chocks
- Jockey leg designed to be secure in transit
- Lockable dispensing compartment complete with hand pump dispenser with minimum 6m delivery hose
- Off-road tyres
- Safety chain
- Supplied with lights as required by risk assessment
- Where access is required at height for security and maintenance purposes, a suitable system must be in place to prevent falling from height.

Minimum requirements - operator

- Always operate / use the equipment in accordance with manufacturer's instructions / recommendations
- Competent in dealing with spills and environmental protection
- Ensure COSHH data is available for liquids (if applicable)
- Ensure that the towing vehicle and trailer does not exceed rated capacity
  Stop work if any unauthorised / unsupervised personnel enter their immediate work area
- If towing required:
  - Must have correct driving licence category for towing
  - Operator must consider stability when towing and the operator must refer to the operator's manual prior to towing
  - Special consideration must be given to the weight being towed, especially for braking activities.

Back to contents page

Plant and Equipment Minimum Standards

Back to contents page

Desirable - plant

- Security wheel clamps
- Spill kit
- Tow hitch lock.

Hazards / risks

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

- Do not use if the equipment is, or appears to be damaged
- Ensure that good housekeeping is applied, and the trailer is kept clean and tidy
- Only to be used on gradients within the machine's capability (Refer to manufacturer's manual)
- Refuelling – fuel spillage
- Stability during loading and unloading
- Stability moving around site.

5.7 Highway Tow Bowser

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

General

- Highway use trailer mounted water / fuel bowser with a capacity of 500 – 2,000l.

Minimum requirements - plant

- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Supplied with lights, and if used on Public Highway compliance with C&U regulations (working Lights, indicators, rear registration plates, etc.)
- 12v electric / petrol / diesel driven dispensing pump (Solar powered fuel dispenser, to be considered)
- 40mm towing eye
- Automatic shut-off nozzle
- Fuel bowsers must be bunded 110 per cent (double bunded)
- Fuel / water level gauge
- Handbrake
- Jockey wheel designed to be secure in transit and maximise ground clearance, i.e., above the bottom of the chassis frame
- Lockable dispensing compartment complete with powered pump dispenser
- Mudguards
- Off-road tyres
- Overrun braking system
- Breakaway / secondary safety cables to be fitted
- Where access is required at height for security and maintenance purposes, a suitable system must be in place to prevent falling from height.

Minimum requirements - operator

- Must have correct driving licence category for towing
- For carriage of diesel or fuel oil on the public highway in quantities greater than 1,000 litres, the driver must be trained and hold an ADR certificate
- Always operate / use the equipment in accordance with manufacturer's instructions / recommendations
- Competent in dealing with spills and environmental protection

Back to contents page

Back to contents page

- Ensure the correct registration number is displayed on the rear of the trailer
- Ensure COSHH data is available for liquids (if applicable)
- Ensure the roadworthiness of the trailer
- Ensure that the towing vehicle and trailer does not exceed rated capacity
- Operator must consider stability when towing and the operator must refer to the operator's manual prior to towing
  Stop work if any unauthorised / unsupervised personnel enter their immediate work area
- Special consideration must be given to the weight being towed, especially for braking activities.

Desirable - plant

- LED lights, instead of bulbs, should be able to work with the towing vehicle without the need for retrofit resistor packs
- Security wheel clamps
- Suitable number plate holder to facilitate quick changeover and security of attachment
- Tow hitch lock
- Wheel chocks.

Hazards / risks

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

- Do not use if the equipment is, or appears to be damaged
- Ensure that good housekeeping is applied, and the trailer is kept clean and tidy
- Only to be used on gradients that are within the machine's capability (Refer to manufacturers manual)
- Refuelling – fuel spillage
- Stability during Loading and unloading
- Stability moving around the site and on the public highway.

Back to contents page

5.8 Agricultural Tractor Trailer

(Trailer for agricultural tractor with a maximum gross capacity of 33t and bed length up to 6m)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime and minimum requirements

Minimum requirements - plant

- Type approved for use on the UK public Highway in accordance with Directive 2007/46/EC
- Supplied with lights and, if used on the public highway, in compliance with C&U regulations (indicators, registration plates, etc.)
- Additional safety chain (manufacturer / hire company approved) to join the towing vehicle and trailer for use during towing activities between 3.5t and up to 10t
- Trailers with payloads of 10t to 33t must be fitted with an air braking system complete with an emergency brake that will engage in the event of the trailer becoming decoupled from the towing vehicle.
- **Braking System / secondary failsafe braking system**
  - All trailers to be fitted with an air brake system (Preferable)
  - If the air brake system isn't installed, then they must be fitted with hydraulic brakes and an emergency braking system that will engage in the event of the trailer becoming decoupled from the towing vehicle
  - For trailers up to 3.5t not fitted with air or hydraulic brakes, they must have a standard braking system with a snatch / breakaway cable system in place.
- Heavy-duty sprung drawbar
- Fixed towing eye
- LED rear and side lights
- Work at height protection rails along the entire length of the bed
- Side crash guards
- D Shackles in trailer bed
- Agricultural trailers towed by tractors must have hydraulic-operated ramps. Agricultural trailers not towed by tractors, ramps must be spring-assisted and complete with ratchet strap supports
- Ratchet-type parking brake
- Heavy-duty jockey leg / stay
- Side toolbox

Plant and Equipment Minimum Standards

Back to contents page

- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of pre-hire inspection
- Operator instructions manual, including load charts, must be with the trailer
- All safety decals in place and legible
- Chequer plate or timber bed
- Chequer plate ramps
- Wheel nut indicators
- Labelled each side with tyre inflation pressure.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Must be able to demonstrate they are fit for work
- Must have correct driving licence category for towing
- Must be competent and have received training on hitching the trailer to a towing vehicle
- Load positioning – ensure the load is correctly positioned to prevent nose overload
- Load security – load must be securely tied down by approved methods
- Ensure that the towing vehicle and trailer do not exceed the rated capacity
- Attend full induction before starting work
- Be signed onto the appropriate SSoW documentation for the task
- Complete pre-use check sheet/e-inspection
- Comply with Inspection and Defect Reporting System
- Have a competency assessment before being put to work – be competent with hitching the machine to the towing vehicle
- Report all unsafe conditions
- Always operate / use the equipment in accordance with the manufacturer's instructions / recommendations.

Desirable - plant

- Hydraulically operated flip-toe ramps
- Full-width ramp
- Hydraulic Jack Leg
- Single leaver control valve by ramps.

Hazards / risks

- Stability during loading and unloading
- Implement sufficient control measures to protect members of the public
- Ensure that good housekeeping is applied, and trailer / vehicle are kept clean and tidy
- Do not use if the equipment is, or appears to be damaged
- Do not load / unload on sloping ground
- Not to be used in an overloaded state.

6 Excavators

6.1 180o Excavator / Backhoe Loader

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of
- plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- On the public highway- insured and compliant with Construction and Use (C&U) regulations (Vehicle Excise Duty (VED) registered, working lights, indicators, registration plates on the rear, etc.)
- Flashing amber beacon
- Brake efficiency testing to be carried out, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- Check valves must be fitted to the excavator's boom and dipper circuits
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by a risk assessment for plant machinery travelling on public highways
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, and cameras (270° / 360°) - as applicable
- Reversing alarm to be fitted working and audible outside of the cab; in residential or built-up areas, this must be replaced with a white noise alarm
- Roll Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) to cab
- If wheeled duties use axle locks for other duties, stabilisers must be deployed
- Isolation controls by a secondary device, such as seat rotation
- All buckets supplied with machines must come without teeth unless requested
- Engine emissions are compliant with EU Stage V

Back to contents page

- If quick hitch fitted:
  - **Below 5 tonne machines**
    - Twin locking fully automatic quick hitch devices, manual quick hitch, or directly mounted
  - **5 tonne machines and above**
    - Fully automatic double locking (unless fixed as a direct attachment, no quick hitch)
  - Have an in-cab warning alarm where a quick hitch is fitted
  - Copy of the manufacturer's operating instructions
  - Pre-use Inspection signed off
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.
- Secondary 'Dead Man' operation / machine hydraulics and seat belt engaged interface
- Full telematics system
- Locking caps / covers to fuel and all other tanks
- Wheel nut indicators and tyre Psi information are clearly displayed.

Minimum requirement – lifting

- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.
- Current 12-month LOLER thorough examination certificate
- Unless demonstrated that it will not be used for lifting:
  - Six-month LOLER thorough examination of lifting accessories
  - Certified lifting point required for all lifting duties
  - Safe Working Load (SWL) to be clearly marked on certified lifting points
  - When using a lifting eye, an internal thrust bearing type swivel hook must be used to ensure the load can be manoeuvred without risk of swinging back or overloading. Short sling chain to be employed to stop side load
  - Audible or visual overload warning system fitted and operational
  - A machine specific lifting duty sheet, lift plan and risk assessment.

Back to contents page

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Category B driving licence for road use
- Authorisation required prior to driving on public highway by site manager / contractor
- Do not break ground unless briefed on, have received, and fully understood a permit to break ground
- Operator to ensure buckets are always carried safely and securely when being transported
- Seat belt must be worn
- If quick hitch fitted:
  - Be briefed on the safe use of quick hitches
  - Operator must be trained in how to use specific quick hitch attachments
  - Daily inspection signed off.
- If used for lifting:
  - Operator must be trained in how to use the excavator as a crane and specific lifting attachments
  - Lift plan and/or permit to lift must be briefed and understood.

Plant and Equipment Minimum Standards

Back to contents page

Desirable - plant

- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Complete people exclusion area around the plant and operation
- Use of slew and height restrictors, where identified in the risk assessment.

Desirable - operator

- Operator to have passed drug and alcohol (D&A) test on induction and subject to ongoing medical screening / surveillance
- Operator to be competency assessed in dealing with spills and environmental protection.

Hazards / risks

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

- Overturning if on uneven ground or lifting duties exceeded
- Underground services
- Use of accessories and how they are attached / inspected, such as a breaking hammer.

6.2 Mini Excavator

(Including machines 10t and below, rubber or steel tracked, diesel or battery powered)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.
- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Flashing amber beacon
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by risk assessment for plant machinery travelling on public highways
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended.
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, cameras (270° / 360°), radar - as applicable
- ROPS and FOPS to cab
- Tip Over Protection Structure (TOPS) to cab as minimum. It applies to compact excavators (as defined in ISO 6165) with swing-type boom, having an operating mass of 1000kg to 6000kg
- All buckets supplied with machines must come without teeth unless requested
- Risk assessments to be completed to assess the largest / most stable machine possible to complete the task
- Engine emissions are compliant with EU Stage V
- Secondary 'Dead Man' operation / machine hydraulics and seat belt engaged interface
- Use of slew and height restrictors, where identified in the risk assessment
- If quick hitch fitted:
  - **Below 5 tonne machines**
    - Twin locking fully automatic quick hitch devices, manual quick hitch, or directly mounted
  - **5 tonne machines and above**
    - Fully automatic double locking (unless fixed as a direct attachment, no quick hitch)
  - Have an in-cab warning alarm where a quick hitch is fitted. Only on

Back to contents page

Back to contents page

fully automatic hitch combinations.
  - Copy of manufacturer's operating instructions
  - Pre-use Inspection signed off.
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.
- **3 tonne machines and below only**
  - Extendable tracks
- **5 tonne machines and above only**
  - Full telemetry

Minimum requirements – Lifting

- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.
- Current 12-month LOLER thorough examination certificate
- Unless demonstrated that it will not be used for lifting:
  - Six-month thorough examination of lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on all certified lifting points
  - Audible or visual overload warning system fitted and operational
  - A machine-specific lifting duty sheet, lift plan and risk assessment
  - When using a lifting eye, an internal thrust bearing type swivel hook must be used to ensure the load can be manoeuvred without the risk of swinging back or overloading, and a short sling chain must be employed to stop side load
  - **3 tonne and above machines**
    - Valves must be fitted to excavators' boom and dipper rams.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Category B driving licence for road use
- Do not break ground unless briefed on, received, and fully understood a permit to break ground
- Operator to ensure buckets are always carried safely and securely when being transported
- Seat belt must be worn
- Operator must stop work and isolate the machine if any unauthorised / unsupervised personnel enter their exclusion zones
- If quick hitch fitted:
  - Be briefed on the safe use of quick hitches
  - Operator must be trained in how to use specific quick hitch attachments
  - Daily inspection signed off.
- If used for lifting:
  - Operator must be trained in how to use the excavator as a crane and specific lifting attachments (Note: A mini excavator is only suitable for mechanical lifting / lowering if check valves have been fitted to the boom and dipper arm)
  - Lift plan and/or permit to lift must be briefed and understood.

Desirable - plant

- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry

Back to contents page

zone once the operator has activated the green entry light. Refer to Appendix 8
- Reversing alarm to be fitted, working and audible outside the cab.

Desirable - emissions
- Electric engines available for 1.9t mini excavators.

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

Hazards / risks
Significant hazards / risks identified when operating the machine and for those adjacent to the machine:
- Underground services
- Use of accessories and how they are attached / inspected, such as a breaking hammer.

6.3 Tracked 360º Excavator

(All machines above 10t, battery or diesel-powered)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.
- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Flashing amber beacon
- External green light fitted to indicate when the seatbelt is fastened
- Mirrors to satisfy 1m high at 1m distance visibility criteria
- **13 tonne and above machines only**
  - Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
  - Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Secondary 'Dead Man' operation / machine hydraulics and seat belt engaged interface
- Full telematics system
- Locking caps / covers to fuel and all other tanks
- Use of slew and height restrictors, where identified in the risk assessment
- Movement alarm fitted, working and audible outside of the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS to cab
- FOPS where required by risk assessment where the working environment requires
- Handrails on the body where access is required for refuelling or maintenance.
- All buckets supplied with machines must come without teeth unless requested
- Work at height protection to provide a safe work environment when on

Back to contents page

Back to contents page

the machine for refuelling, maintenance, etc.
- Engine emissions are compliant with EU Stage V
- Quick hitch:
  - Must be fully automatic double-locking
  - Have an in-cab warning alarm
  - Copy of manufacturer's operating instructions
  - Pre-use inspection signed off.
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.

Minimum requirements – lifting

- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.
- Current 12-month LOLER thorough examination certificate
- Unless demonstrated that it will not be used for lifting:
  - Six-month thorough examination of lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on all lifting points
  - When using a lifting eye, an internal thrust bearing type swivel hook must be used to ensure the load can be manoeuvred without risk of swinging back or overloading. Short sling chain to be employed to stop side load
  - Audible or visual overload warning system fitted and operational
  - A machine-specific lifting duty sheet, lift plan and risk assessment
  - If lift and carry duties are to be undertaken, a specific risk assessment is to be completed, taking into account the manufacturer's instructions
  - Check valves must be fitted to the excavator's boom and dipper circuits.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Do not break ground unless briefed on, have received, and fully understood a permit to break ground
- Operator to ensure buckets are always carried safely and securely when being transported
- Seat belt must be worn
- Operator must stop work and isolate the machine if any unauthorised / unsupervised personnel enter their exclusion zones
- Quick hitch:
  - Be briefed on the 'safe use of quick hitches'
  - Operator must be trained in how to use specific quick hitch attachments
  - Daily inspection signed off.
- If used for lifting:
  - Operator must be trained in how to use the excavator as a crane category for lifting operations is A58c (<10t) or A59c (>10t)
  - Operator must be trained in how to use specific lifting attachments
  - Lift plan and/or permit to lift must be briefed and understood.

Desirable - plant

- Track direction indicator note
- Use of remote banksman cut-off switch where appropriate
- Zero tail swing ballast / counterweight.

Desirable - emissions

- Hybrid or fully electric powered for 13t to 40t excavators.

Desirable - operator

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

Hazards / risks

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

- Controls can be caught inadvertently if near the safety lever
- Underground services
- Use of accessories and how they are attached / inspected, such as a breaking hammer.

6.4 Wheeled 360º Excavator

(All machines above 10t, battery or diesel-powered)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- On the public highway – insured and compliant with C&U regulations (VED registered, working lights, indicators, rear registration plate, etc.
- Flashing amber beacon
- Brake efficiency testing to be carried out, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by risk assessment for plant machinery travelling on public highways
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended
- Mirrors to satisfy 1m high at 1m distance visibility criteria
- **13 tonne and above machines only**
  - Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
  - Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
  - Handrails on the body where access is required for refuelling or maintenance
- Reversing alarm to be fitted working and audible outside of the cab; in residential or built-up areas, this must be replaced with a white noise alarm

Back to contents page

Back to contents page

- ROPS and FOPS to cab
- All buckets supplied with machines must come without teeth unless requested
- System to prevent operation at speeds in reverse
- Secondary 'Dead Man' operation / machine hydraulics and seat belt engaged interface
- Full telematics system
- Locking caps / covers to fuel and all other tanks
- Use of slew and height restrictors, where identified in the risk assessment
- Engine emissions are compliant with EU Stage V
- Quick hitch:
  - Must be fully automatic double-locking
  - Have an in-cab warning alarm
  - Copy of the manufacturer's operating instructions
  - Pre-use inspection signed off
- Unless demonstrated that it will not be used for lifting:
  - Six-month thorough examination of lifting accessories
  - Certified lifting point required for all lifting duties
  - SWL to be clearly marked on all certified lifting points
  - When using a lifting eye, an internal thrust bearing type swivel hook must be used to ensure the load can be manoeuvred without risk of swinging back or overloading. Short sling chain to be employed to stop side load
  - Audible or visual overload warning system fitted and operational
  - A machine-specific lifting duty sheet, lift plan and risk assessment
  - If lift and carry duties are to be undertaken, a specific risk assessment is to be completed, taking into account the manufacturer's instructions
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.

Minimum requirement – lifting

- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place
- Current 12-month LOLER thorough examination certificate
- If used for lifting:
  - Operator must be trained in how to use specific lifting attachments
  - Lift plan and/or permit to lift must be briefed and understood
  - Check valves must be fitted to the excavator's boom and dipper circuits.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Category B driving licence for road use
- Authorisation required prior to driving on public highway by site manager / contractor
- Do not break ground unless briefed on, have received, and fully understood a permit to break ground
- If wheeled duties, use axle locks; for other duties, stabilisers must be deployed
- Operator to ensure buckets are always carried safely and securely when being transported
- Seat belt must be worn
- Quick hitch:
  - Be briefed on the safe use of quick hitches
  - Operator must be trained in how to use specific quick hitch attachments
  - Daily inspection signed off.

MORGAN SINDALL INFRASTRUCTURE

Plant and Equipment Minimum Standards

Back to contents page

Desirable - plant

- A 360º camera system that interlinks pictures from multiple cameras
- Use of remote banksman cut-off switch where appropriate.

Desirable - emissions

- Hybrid or fully electric powered for 13t to 40t excavators.

Desirable - operator

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

Hazards / risks

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

- Operating in reversing mode
- Overturning if on uneven ground or lifting duties exceeded
- Underground services
- Use of accessories and how they are attached / inspected, such as a breaking hammer.

Back to contents page

6.5 Plant accessories and attachments

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

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for plant accessories and attachments.

Minimum requirements – general

- All accessories must be compatible with the host machine (weight, pressures, hydraulic flow etc.)
- All accessories must 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.
- All attachments / accessories must be hydraulically powered (not mechanical)
- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of pre-hire inspection
- Evidence of regular inspection plus 'next service and or inspection due' date sticker
- Operator instructions manual, including load charts, must be with the machine
- All safety decals are in place and legible.

Minimum requirements – operator

- Must be suitably trained and competent in the use of this type of equipment and for the host item of plant
- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Ensure that the machine and ancillary equipment are operated in accordance with the manufacturer's instructions and guidelines
- All hoses must be inspected regularly (daily, pre-use checks).

Hazards / Risks

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

- Accessories can increase instability in the host item; consideration must be given to ground conditions
- Entrapment between plant item and accessory
- Hydraulic hoses and cables can become trapped between moving parts; this may potentially cause a hydraulic oil spill if the hose bursts
- Reduced visibility following the installation of an accessory.

7 Dumpers

General
Dual View dumpers are mandated across all Morgan Sindall Infrastructure sites for machines 6t and above. This applies to all dumpers provided by subcontractors.

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

Dumpers and dump trucks must always be operated in accordance with the manufacturer's instructions. To avoid restricting the driver's vision, they must not be filled above the safe load line inside the skip or above the metal rim where no safe load line is indicated.

7.1 Dual View dumpers 6t and above / forward and side tipping dumper 3t

Back to contents page

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirements - plant

- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- Flashing amber beacon
- Brake efficiency testing to be carried out, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by risk assessment for plant machinery travelling on public highways

Back to contents page

  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended.
- Mirrors to satisfy visibility 1m high at 1m distance visibility criteria
- Reversing alarm to be fitted working and audible. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS and FOPS cab structure
- **6t and above Dual view machines only**
  - Rear camera must be fitted, alerting the driver / operator to persons or obstructions within the immediate proximity of the rear of the dumper
  - **Pre-2025 models**
    - Morgan Sindall owned machines must have an audio-visual warning device in-cab tilt monitor fitted which measures the tilt of the whole machine
  - **2025 and onwards models**
    - Morgan Sindall owned machines registered post 2025 must have an audio-visual warning device in-cab tilt monitor fitted which is activated when the skip is raised
- **3t Standard Forward Tipping Dumpers only**
  - Front collision avoidance systems must be fitted and operational
  - Fitted with ROPS protection only, the operator must dismount whilst being loaded
- Selection of dumpers below 6t must have a specific risk assessment before work to determine suitability for the task. This must take account of the inclines and speeds at which they are to be used and any risk regarding visibility
- For Dual View dumpers 6t and above, the operator may remain in the cab whilst being loaded, subject to a task-specific risk assessment being carried out and Original Equipment Manufacturer (OEM) impact testing completed and satisfactory for the dumper being used
- Locking caps / covers
- Tipping mechanism to be in good condition
- Tow hitch (where permissible) must have the correct pin with a chain attached to the dumper
- Full telematics system
- Seat belt operation interlocked with ignition switch / warning indicator
- Mechanical prop fitted under the body (maintenance purposes only)
- Engine emissions are compliant with EU Stage V.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Operators operating Dual View Dumpers must have completed the Rotating Seat Dumper familiarisation SiteRight training course and be assured / accredited by the National Open College Network (NOCN) Group. This must be in place for all providers / supply chain members
- Where turntable dumpers are narrow mouth or high lift equipment, the operator must have received additional training in accordance with manufacturer recommendations
- Operator must hold a Category B driving licence for road use
- Authorisation required prior to driving on public highway by site manager / contractor
- Do not operate if the machine is, or appears to be damaged
- Do not tip whilst on the move or during high winds
- Do not travel or operate onto stockpiles or soil heaps
- Ensure stop blocks are used to prevent falls into excavation
- 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
  - The operator must consider stability issues when towing, and the operator must refer to the operator's manual prior to towing.

Plant and Equipment Minimum Standards

Back to contents page

Desirable - plant

- **Dual view machines 6 tonne and above only**
  - Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). Refer to PET GUID 01 Human Form Recognition.
    As a rule of thumb, 25 per cent of the dumper capacity should be placed in a skip / discharge area before towing
  - Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.
  - Full ROPS, FOPS and OPS (Operator Protective System) cab structure
  - Front and rear cameras
  - Fitted with directional object detection sensors (Active Sense Control System
  - **Tilt monitors**
    - Machines provided by subcontract partners and supply chain used on Morgan Sindall projects are fitted audio-visual warning device in cab tilt monitor (either pre or post-2025 specifications – see mandatory section above)
- Complete people exclusion area around plant and the operation
- Load measurement device.

Desirable - operator

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

Hazards / risks

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

- Consider the risk of towed items
- Falls / overturning into excavations
- High risk of overturning at speed and on inclines. Refer to the manufacturer's recommendations
- The buckets on side tipping dumpers can protrude significantly when turned to the side, creating a hazard to pedestrians
- Wet materials / clay is prone to stick and cause instability during tipping
  A three-way or side-tipping dumper must be three-way, completely left, right, or forward only. Diagonal tipping should be avoided, as non-compliance can result in loss of stability.

Back to contents page

7.2 Articulated Dump Truck

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

General

- Daily inspection records for plant to be completed. (Omni tag or similar systems must be displayed).

Minimum requirements – plant

- Full telematics system
- Flashing amber beacon
- Break efficiency testing to be carried out and recorded, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by manufacturer
- External green light fitted to indicate when the seatbelt is fastened
- Mirrors to satisfy visibility 1m high at 1m distance visibility criteria
- Reverse camera system
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS cab structure. Cabs must have a minimum of two points of egress, including one for emergency use; these must not be restricted
- Fitted with Inclinometers
- Articulation lock must be fitted and operational
- Locking caps / covers to fuel and all other tanks
- Locking doors with key to all cabs
- Maximum load capacity (payload) to be clearly marked
- Mechanical prop fitted under the body (for maintenance purposes only)
- A visual and/or audible warning when the body is in the raised position
- No tailgates unless specifically requested and subject to a risk assessment
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Tyres to be suitable for the ground conditions, have sufficient tread and be free from defects
- Engine emissions are compliant with EU Stage IIIB
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed
  - Tipping prohibited / or ejector type only.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- All site and road speed limits must be briefed and complied with
- Body is not to be tipped while on the move
- Ensure the machine is operated in accordance with the manufacturer's instructions and in line with their training
- Report defects and stop the machine where the defect is safety-critical
- Seat belt must be worn.

Desirable - plant

- Human Form Recognition cameras – minimum to cover 360° visibility. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / DTU). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Coloured seat belts improve visibility. Dump trucks can be supplied and fitted with ejector bodies, 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
- Sites shall provide a suitable area where operators can conduct regular brake testing. It is recommended, as a minimum, that these tests be completed and recorded weekly
- Site management should look at ways to reduce reversing distances (Risk Assessment Method Statement (RAMS)). Tipping areas on site need to be maintained to avoid unstable ground conditions and/or unnecessary slopes / inclines.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Falls / overturning into excavations
- High risk of overturning at speed and on inclines. Refer to the manufacturer's recommendations
- Wet materials / clay is prone to stick and cause instability during tipping.

7.3 Tracked Dumpers (3t to 15t)

These are self-propelled diesel-powered, steel or rubber-tracked, forward / rear / side tipping dumpers from 3t to 15t.

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - plant

- Flashing amber beacon
- External green light fitted to indicate when the seatbelt is fastened, the exception to this being by risk assessment for vehicles travelling on the public highway
- Mirrors to ensure 1m high and 1m distance visibility criteria
- All machines 11t and above to be supplied with a reversing camera
- Reversing alarm fitted, working and audible outside of the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS and FOPS cab structure
- Mechanical prop fitted under the body (for maintenance purposes only).
- Full telematics system.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Seat belt must be worn.

Desirable – plant

- **11 tonne and above machines only**
  - Human Form Recognition cameras – maximum detection area of 360° recording (270° visibility and 360° recording). Refer to PET GUID 01 Human Form Recognition
  - Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.
- Coloured seat belts to improve visibility

Back to contents page

Back to contents page

- Skip inclinometer warning device in the cab.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Load should be level with the skip
- Maintenance below skip hazardous, propping arrangements required
- Only to be used on gradients that are within the machine's capability
- Risk of overturning on inclines
- Stop blocks can be used to prevent falling in excavation.

Back to contents page

8 Cranes

8.1 Crawler Cranes

(Hydraulic cranes are permitted only. No mechanical cranes must be used on sites).

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- If this item of plant is being used for lifting operations, SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Flashing amber beacon
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- Reversing alarm to be directional, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- 360° all-round visibility aids (camera system) to be fitted to all crawler cranes / piling rigs (mini rigs excluded)
- ROPS and FOPS cab structure
- Engine emissions are compliant with EU Stage IV
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.

Minimum requirements – lifting

- Current 12-monthly LOLER thorough examination 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 maintenance, inspection and thorough examination of mobile cranes)
- Current six-monthly LOLER thorough examination certificate for all lifting tackle carried
- Current six-monthly LOLER certificate for the crane
- Before any hired-in or subcontractor-owned crawler cranes are allowed to commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit the site and inspect the crawler crane. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the inspection
- Lifting accessories marked with SWL
- If lifting equipment is to be used within 6km of an aerodrome / airfield and its height exceeds that of surrounding structures or trees or is

Back to contents page

greater than 10m, the Morgan Sindall AP and/or Supply Chain AP must consult the airport authority / aerodrome manager for permission to work (*BS 7121 Cl. 5.6.3.3*). For further information on operating lifting equipment in close proximity to aerodromes / airfields, please see the Construction Plant-hire Association (CPA) Tower Crane Interest Group Guidance - *Operating Tower Cranes in the Vicinity of Aerodromes, Notification and En-route Obstacle Lighting (TIN 039)*

- Boom hoist cut-out facility
- Crane fitted with anemometer or other device to monitor in-service wind speeds
- Door lock keys supplied
- Fitted and operational audible or visual overload warning system
- Handrails fitted to running boards and crane upper structure
- Hook block over hoist cut-out facility
- Load-bearing hydraulic cylinders fitted with check valves
- Slew alarms
- Slew, jib height and radius restrictors if working near overhead power lines, railways, adjacent live traffic, etc. Tracks only to be retracted on flat level stable ground, the crane must be fitted with a spirit level in the operator's sight line showing acceptable limits
- Where cranes have extendable tracks, and where there is a limitation on the gradient for carrying out extension / retraction, the crane must be fitted with a spirit level in the operator's sight line showing acceptable limits
- Independent checks (Magnor Plant) for all external crawler cranes must be completed. Note: Magnor Plant personnel must attend a full site induction before entering each site / project.

Minimum requirements - man-riding requirements

- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - operator

- For the competency requirements for the lifting operator refer to
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard.
- Valid medical certificate
- Must have passed an alcohol and drug test before starting work
- Competency assessment before being put to work – log book checks
- Evidence of familiarisation training for the type of crane to be operated
- Approved SSoW, lifting plan and permit to lift must be in place prior to operations commencing
- Seat belt must be worn

Desirable - plant

- A 360º camera system that interlinks pictures from multiple cameras
- A camera system that can identify pedestrians from a maximum distance of 5m to a minimum of zero in all directions, warning the operator and pedestrians of encroachment into the exclusion zone
- Human Form Recognition cameras – maximum detection area of 360° recording (270° visibility and 360° recording). Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / DTU). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Fitted with hook block cameras
- Jib head tracker if working on sites with blind lifting issues
- Means for the operator to monitor hoist rope tension such as camera or mirror

- Red, amber, and green high-level illumination to indicate that the crane is operating within safe limits
- Seat belt operation interlocked with ignition switch / warning indicator
- Telescopic operator cabs fitted
- Where crawler cranes are used over shaft work, it is desirable for:
  - Cranes to be fitted with elevated cabs
  - Window guards.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator / supervisor

- Crane supervisor to have hand-held anemometer to measure wind speeds
- Operator to have a minimum of three years relevant operating experience
- Operator subject to ongoing medical screening / surveillance.

Hazards / risks

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

- Dropped loads
- Ground conditions capable of withstanding imposed track loadings
- Imposed loadings on underground services
- Jib clash with adjacent cranes / tall plant
- Load path – slewing over site personnel
- Potential excessive noise
- Overturning if lifting duties exceeded
- Operating in reversing mode
- Use of jib walkways – falls from height.

Back to contents page

8.2 Mobile Crane

(Hydraulic cranes are permitted only. No mechanical cranes must be used on sites).

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Flashing amber beacon
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, and cameras (270° / 360°) - as applicable
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS and FOPS cab structure
- Door lock keys supplied
- Protective mesh must be in place to the side of the cab on the jib side if the window is an opening type
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Engine emissions are compliant with EURO 4
- If used under overhead cables or obstructions
  - Height restrictors with indication on the machine
  - Health and safety executives GS6 avoidance of danger from overhead electric power lines must be followed.

Minimum requirements – FORS

- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms

Minimum requirements – lifting

- CE certificate and current test certificate
- Current 12-monthly LOLER thorough examination certificate minimum. Sites with exceptional hazards, it is recommended that a six-monthly thorough examination is completed; this would be identified through risk assessment
- 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

Plant and Equipment Minimum Standards

Back to contents page

- Current six-monthly LOLER thorough examination certificate for all lifting accessories carried and marked with SWL as a minimum. Sites with exceptional hazards, it is recommended a three-monthly thorough examination of all lifting accessories, this would be identified through risk assessment
- Lifting accessories marked with SWL
- If lifting equipment is to be used within 6km of an aerodrome / airfield and its height exceeds that of surrounding structures or trees or is greater than 10m, the Morgan Sindall AP and or Supply Chain AP must consult the airport authority / aerodrome manager for permission to work (*BS 7121 Cl. 5.6.3.3*). For further information on operating lifting equipment in close proximity to aerodromes / airfields, please see the Construction Plant-hire Association (CPA) Tower Crane Interest Group Guidance - *Operating Tower Cranes in the Vicinity of Aerodromes, Notification and En-route Obstacle Lighting (TIN 039)*
- Anemometer fitted to all cranes
- Any cranes that are accompanied with independent ladders, these ladders must contain inspection stickers to evidence that checks have been carried out and are in date, regularly
- Carrier hoisting and lowering ropes with a minimum diameter of 8mm
- Chassis brakes to be tested under Special Type General Order (STGO) requirements as per Construction Plant-hire Association (CPA) Technical Information Notice (TIN) 104 requirements for in-service performance testing of the chassis brakes of mobile cranes
- Crane needs to be fitted with a 'Dead Man' (the operator must be in the seat to operate the crane; once the operator leaves the seat, the 'Dead Man' is operational
- Fitted and operational audible or visual overload warning system
- Hook fitted with safety catch
- Load-bearing hydraulic cylinders fitted with check valves
- Operation manual, including load charts, to be available with the machine on site
- Over hoist limit device installed
- Regular checks must be carried out on the crane's outrigger mats, including the condition of the handles
- Slew alarms
- Use slew, jib height, and radius restrictors if working near overhead power lines, railways, adjacent live traffic, etc.

Minimum requirements - man-riding requirements

- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - operator

- For the competency requirements for the lifting operator refer to SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard
- Minimum of category C driving licence when unit over 7.5t Gross Vehicle Weight (GVW)
- Valid medical certificate [See BS7121 -1:2016 'Code of practice for safe use of cranes, Part 1: General' and RtB 12 'Occupational health']
- Competency assessment before being put to work – log book checks
- Evidence of familiarisation training for the type of crane to be operated
- Must have passed an alcohol and drug test before starting work
- Approved SSoW, lifting plan and permit to lift must be in place prior to operations commencing
- Seat belt must be worn.

Desirable - plant

- Block stand to be provided when reeving rope into hook block whilst block is lying down
- Camera to be fitted to cathead to give the operator a clear view of load when blind lifting

Back to contents page

- Crane supervisor to have hand-held anemometer to measure wind speeds
- Fall restraint system fitted to boom for rigging super-lift
- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- Means for the operator to monitor hoist rope tension, for example, camera or mirror
- Red, amber, and green high-level illumination to indicate that the crane is operating within safe limits
- Sectional / lightweight or circular outrigger pads, if manually handled to reduce risk to personnel
- Use of slew restrictors where appropriate.

Desirable - emissions

- Engine emissions are compliant with EURO 6.

Desirable - operator

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

Hazards / risks

- Refer to SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard as well as the below list.
  - Dropped loads
  - Imposed loadings on underground services
  - Jib clash with adjacent cranes / tall plant
  - Load path – slewing over site personnel
  - Outrigger pads can be very heavy and awkward shapes
  - Overturning if lifting duties exceeded
  - Reversing manoeuvres.

Back to contents page

8.3 Lorry Loader Crane

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - vehicle

- Current Ministry of Transport (MOT) plating certificate
- Current operator 'O' licence displayed in the cab windscreen
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- Reversing alarm fitted, working and audible outside of the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- Audible and visual warning to be fitted in the cab to remind driver / operator, including the hydraulic arm fitted, is not safety stowed before travelling
- Edge protection or fall arrest arrangements where access to the vehicle body is required
- Safe access to all areas where the operator or slinger / signaller is required to work
- Use of slew restrictors where appropriate
- Engine emissions are compliant with EURO 5
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.

Minimum requirements – lifting

- Current 12-monthly LOLER thorough examination certificate
- Current six-monthly LOLER certification for all on-board lifting tackle and accessories
- Have either a four-yearly overload test certificate or thorough examination in line with Association of Lorry Loaders Manufacturers and Importers (ALLMI) guidance note 010 and CPA
  - ALLMI management of lifting operations with lorry loaders best practice guide June 2010
- Accessories to be marked with safe working loads

Back to contents page

- Crane duties chart displayed on the boom or at the operator's station
- Functioning audible warning devices – safe load indicator / rated capacity indicator / device with hydraulic lock-out / warning light / alarm
- If lifting equipment is to be used within 6km of an aerodrome / airfield and its height exceeds that of surrounding structures or trees or is greater than 10m, the Morgan Sindall AP and or Supply Chain AP must consult the airport authority / aerodrome manager for permission to work (*BS 7121 Cl. 5.6.3.3*). For further information on operating lifting equipment in close proximity to aerodromes / airfields, please see the Construction Plant-hire Association (CPA) Tower Crane Interest Group Guidance - *Operating Tower Cranes in the Vicinity of Aerodromes, Notification and En-route Obstacle Lighting (TIN 039).*

Minimum requirements – remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through an umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating devices must be checked for operational function
- Remote control units, including the wearing harness and umbilical cable (where relevant), must be clean and free from damage.

Minimum requirements - FORS

- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- Direct Vision Standard (DVS) – Heavy Goods Vehicles (HGVs) greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Minimum requirements - Chapter 8

- Refer to Section 1 'Introduction' (above) for details on amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - stabilisers

- All lorry loaders attending projects / sites must have the type of stabiliser identified:
  - The operator's manual and instructions must be strictly adhered to
  - Establish if the stabilisers are operated from fixed positions or via remote
  - The risk of crushing injuries increases when fitted with hydraulically operated tilting / rotating stabilisers. This is increased if the tilting / rotating leg retracts towards where the operator needs to stand to operate the controls
  - The operator must always observe the extension and tilting / rotating leg when it is being operated
  - Simultaneous deployment / retraction of stabiliser extensions and tilting / rotating legs is not permitted under any circumstances
  - Outrigger lock-out preventing crane operation with legs in stowed position
  - Stabiliser legs not stowed warning device
- If unsure, do not allow the activity to proceed and seek further guidance from the Lifting Appliance Appointed Person [LA(AP)], Health and Safety Team or both
- Refer to the following safety alerts for further details:
  - ALLMI Safety Alert – Swing-up Stabilisers [Oct 21] – https://www.allmi.com/latest-news/latest-news/568-allmi-safety-alert-swing-up-stabilisers-2
  - National Highways Safety Alert NHa/276, Lorry loader stabilisers https://www.highwayssafetyhub.com/uploads/5/1/2/9/51294565/nha276_-_national_highways_for_information_safety_alert_-_lorry_loader_stabilisers.pdf
  - Appendix 6 - SHEQ Alert Lorry Loaders.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - driver / operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver Certificate of Professional Competence (CPC) qualification
- Approved SSoW, lifting plan and permit to lift must be in place prior to operations commencing
- Seat belts must be worn.

Desirable - vehicle

- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- 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.

Desirable - emissions

- Engine emissions are compliant with EURO 6.

Desirable - operator

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

Hazards / risks

- Refer to SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard as well as the below list.
  - Dropped loads / instability of load
  - Ground conditions capable of withstanding imposed track loadings
  - Imposed loadings on underground services
  - Incorrect (unsafe) deployment and retraction of stabilisers
  - Jib clash with adjacent cranes / tall plant
  - Load path – slewing over site personnel
  - Overturning if lifting duties are exceeded.

8.4 Tower Cranes

A fixed vertical mast crane that is topped by a rotating boom and equipped with a winch for hoisting and lowering loads. The winch can be moved along the boom of a Saddle Jib so that any location within the diameter of the boom can be reached, or the jib angle of a luffing jib crane can be changed to reposition a load at various radii.

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Must be compliant with EC Machinery Directive 2006/42/EC and supplied with a declaration of conformity
- Evidence of Pre-hire inspection
- Evidence of regular inspection plus 'next service and or inspection due' date sticker
- Operator instructions must be with the machine
- All safety decals in place and legible
- Must comply with BS7121, Safe use of Tower Cranes and BS EN 14439:2009, Increased Tower Crane Safety Innovation and Development
- Evidence of pin checks for mast bolts
- Evidence of seven-year slew bolt changes on cranes
- Proof and overload test on installation
- Details of previous hires, usage, and locations
- If the crane is over ten years old, a copy of Non-Destructive Testing (NDT)
- If Mast sections are over ten years old, a copy of NDT
- Details to be supplied of any major repairs
- Current six-monthly LOLER thorough examination certificate verified by the Insurance Examiner
- Current six monthly LOLER thorough examination certificate for all lifting tackle carried
- RCI
- Jib head / trolley camera on sites with blind lifting issues
- Anti-collision / zoning system on multi-crane sites or sites which oversail public property
- Mast lighting, particularly where the mast is situated in a courtyard / lift shaft
- Anemometer
- Door lock keys provided
- Aircraft warning lights (if working within 6km of airports or aerodromes)
- In-cab radio communications with hands-free controls

Back to contents page

Plant and Equipment Minimum Standards

Back to contents page

- Access Ladder locking Trap Door and Tower Anti Climb Fan
- Tower Crane Base Security Enclosure (see diagram and specification below)

  - 3m x 3m Footprint
  - Min. 6m Height
  - Overhang fan at the top of the enclosure to be 400mm in length angled 45° away from the enclosure (downward orientation)
  - 3’ x 1/2’ x 10 SWG mild steel mesh with vertical pitch
  - Door to the enclosure to be locked via padlock with the keys held by an authorised person on site (AP / PM)
- Operator / Maintenance Worker Emergency Rescue Kit
- Pre-erection inspection approval certificate of inspection from third party
- Pre-erection inspection approval certificate
- CO^2 Fire extinguisher fitted on the cab entry platform
- CCTV installed on all projects with a tower crane, which must cover the crane base to deter / identify intruders, along with warning signs
- Adoption of a permit to work to temporarily disable anti-collision / zoning systems, which the Project APL must complete. External white flashing strobe lighting is to be installed on cranes with an anti-collision system to identify when this is disabled
- Hook cameras must be installed, not to negate the need for slinger / signallers
- CCTV cameras must be installed within the cab to monitor the cab and operator.

Minimum requirements – Man-riding requirements – refer to BS7121-5:2006 for further guidance.

- Current six-monthly LOLER thorough examination certificate for the crane
- Ability to restrict the working speed of all crane functions to 0.5m/s. Working wind speed is 7m/s for man-riding operations and 16.5m/s for normal operations. A wind speed reduction on loads still needs to be factored in to reduce the 16.5m/s operating windspeed.
- 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 facility fitted to crane. If not, free-fall capability must be locked out
- Load-bearing hydraulic cylinders fitted with check valves
- Carrier hoisting and lowering ropes with a minimum diameter of 8mm
- Hook fitted with safety catch
- Crane fitted with anemometer or other device to monitor in-service wind speeds.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- Complete Pre-use check (crane hire company specific form as a min MTCPO 4.3.1)
- Evidence of having signed on to the appropriate risk assessment for the task
- Be briefed on the site Plant and Vehicle Management procedures and check for overhead obstructions and hazards
- Competency assessment before being put to work – Evidence of familiarisation training for the type of crane to be operated.
- Must be familiar with BS7121, Safe use of Tower Cranes
- Full induction attended before starting work
- Report all unsafe conditions
- Must be able to demonstrate they are fit for work and provide their latest D&A test results
- Operators must be competent and hold a valid industry recognised competence card – as per Morgan Sindall Infrastructure competency standard
- Full site-defined PPE must be worn - loose-fitting clothing must be avoided to prevent inadvertent operation of controls
- Medical Certificate – renewal dates as per guidelines in MTCPO section 4.3.5.1
- Assess operator on communication skills, language, hand signals and radio use
- Previous operating experience with anti-collision systems when working on multi-crane sites.

Desirable – plant

- Enhanced welfare facilities in cabs such as drinking water, window sunscreens, and air conditioning – where appropriate.

Desirable - operator

- Three years' operating experience.

Hazards / risks

- Dropped loads – exclusion zone set up around the area of lifting operations, loads consisting of loose material / components to be containerised
- Overturning
- Base failure – Base designed, checked and constructed in accordance with relevant loadings and Morgan Sindall Infrastructure temporary works procedures, ground capable of withstanding imposed loads
- Loads over sailing public property – zoning system to be fitted where this is an issue
- Jib clash – coordination with adjacent cranes, tall plant, concrete pump booms, buildings, power lines
- Trespass – Robust base enclosures to always remain locked
- Load Path – slewing over site personnel
- Stricken Operator / Maintenance Worker – an emergency recovery procedure to be developed and implemented by the site with trained personnel available
- Do not operate if the machine is, or appears to be damaged
- Safe working load not to be exceeded.

Back to contents page

MORGAN SINDALL INFRASTRUCTURE

9.1 Compact Telehandlers (=>4m to =<6m)

Designed for tight spaces and urban sites, compact telehandlers offer manoeuvrability without compromising on lift performance. Their low height, short wheelbase, and four-wheel steering make them perfect for accessing restricted areas.

Working and/or travelling on the Highway

- 'HIGHWAY MAINTENANCE' signage (140mm high)
- Insured
- Compliant with C&U Regulations
- VED registered
- Working lights and indicators
- Rear registration plate
- Control measures to prevent the striking of passing vehicles
- Forks secured / folded.

Working under or near overhead obstructions

- Height restrictions with indication on the machine
- HSE GS6 avoidance of danger from overhead power lines.

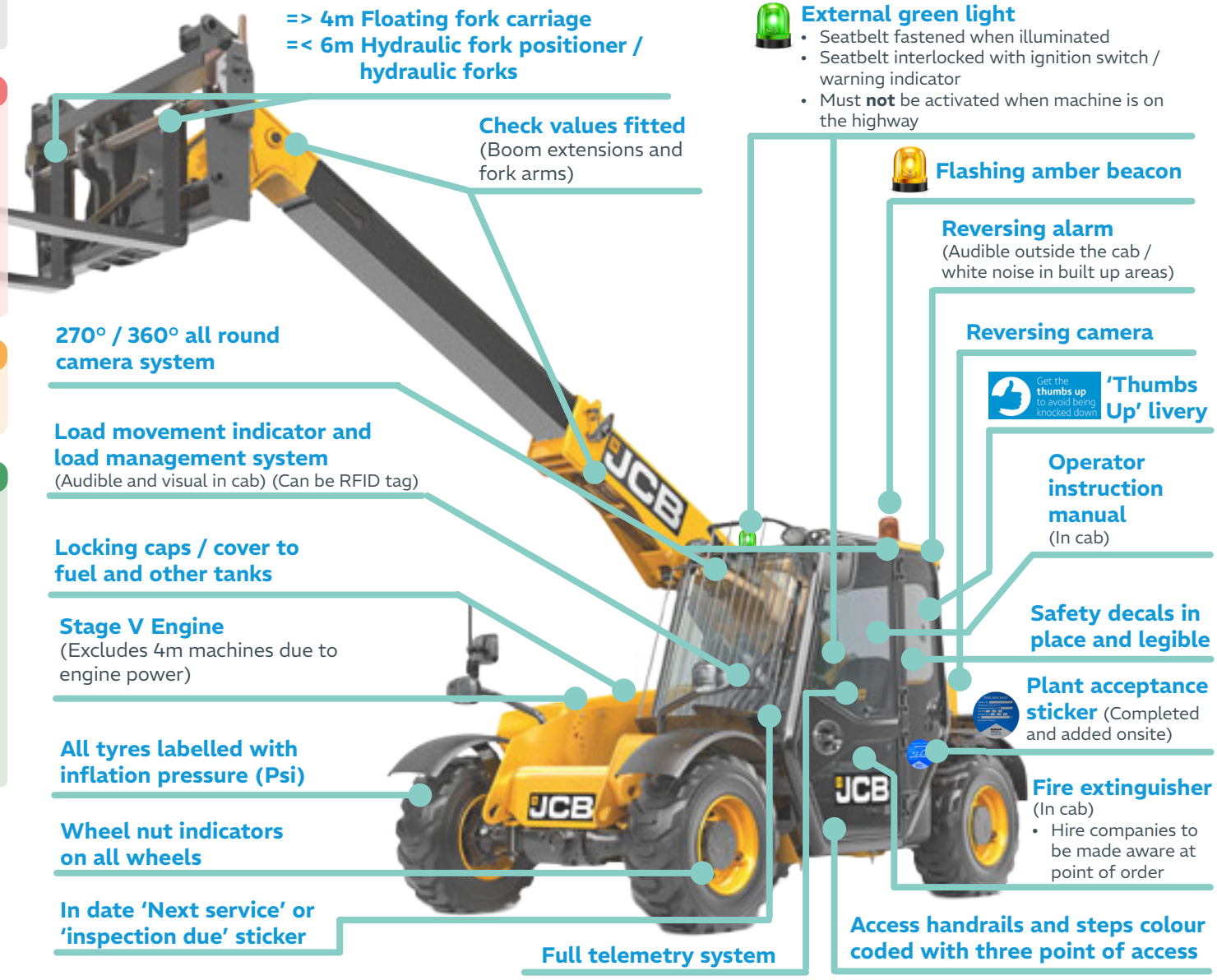
Lifting

IMPORTANT: Before undertaking any lifting operations refer to SH9 STD 01 Management of Lifting Operations and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders).

- Valid 12-month LOLER thorough examination certificate
- Valid six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Certified lifting points for all lifting duties
- **Lifting from forks (under slinging):** Proper attachments fixed with heel pins (not T screws) and specific lift plan
- Mechanical prop fitted under boom for maintenance.

Mandatory requirements

Reminder: All plant and equipment must be inspected before first use, refer to PET FRM 02 - Plant arrival and pre-start check sheet



Back to contents page

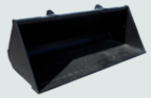
9.1 Compact Telehandlers (=>4m to =<6m)

Desirable (non-mandatory) plant

- Spill kit availability
- Battery-powered (electric) alternative
- Electronic safe to approach system (Mi Thumbs up / Digital Thumbs up).

Attachments

The table below details the compatible attachments for compact telehandlers.

Compatible attachments		4m	6m
	Fork Extensions		✓
	Waste Tipping Skip	✓	✓
	General Purpose Bucket	✓	✓

Useful resources

Click on the relevant image to watch the specific manufacturer's video for each topic area, where applicable.

Load Management Systems / Moment Indicator (LMS / LMI)

Operator minimum requirements

Mandatory

- Hold a relevant and current competency card, which can be either of the following:
  - **CPCS**
    - **A17 (Endorsements A, B, C & E)**
      - A – Industrial Telescopic
      - B – Up to 9m
      - C – All sizes, ex. 360° slew
      - E – Suspended load (non-rough terrain).
  - **CPCS – NPORS (CSCS affiliated)**
    - **N010 (Telescopic handler)**
    - **N138 (Telescopic handler suspended loads).**
- **Driving licence:** Category B
- Authorised to drive on the public highway
- Always wear the seat belt
- Operate the plant and equipment in accordance with manufacturers instructions / guidance
- Competent in load management system and load management indicator
- Check ground conditions and weather, particularly before lifting activities
- Ensure the boom is always carried at a safe level in accordance with the manufacturers guidance
- Report all unsafe conditions, defects and behaviours to onsite supervisor
- Stop work if any unauthorised individuals enter the exclusion zones
- Mount and dismount the machine using the fixed access points and always face the machine using three points of contact
- Switch the vehicle off and remove keys from the ignition before leaving the vehicle unattended
- **Attachments:** Must be familiar and competent to use attachments
- **Site specific**
  - **PPE:** Comply with the PPE standards for the site and activity(ies) being completed. Must be non-loose fitting
  - **Induction:** Attend a full induction before starting work
  - **People Plant Interface:** Briefed on the site-specific Traffic Management Plan (TMP)
  - **Safe Systems of Work (SSoW):** Briefed and signed onto the appropriate SSoW for the task
  - **Daily inspections (pre-use and defects):** Complete daily inspection form PET FRM 04 and comply with onsite defect reporting system.

Desirable (non-mandatory)

- **Drugs and alcohol test:** Passed on induction and subject to ongoing medical screening / surveillance
- **Spills and environmental protection:** Competent (via assessment) in dealing with spills.

9.2 Standard Telehandlers (=>7m to =<20m)

Back to contents page

Deliver powerful performance across lifting, loading, and placing tasks. They are ideal for general construction, and infrastructure projects.

Working and/or travelling on the Highway

- 'HIGHWAY MAINTENANCE' signage (140mm high)
- Insured
- Compliant with C&U Regulations
- VED registered
- Working lights and indicators
- Rear registration plate
- Control measures to prevent the striking of passing vehicles
- Forks secured / folded.

Working under or near overhead obstructions

- Height restrictions with indication on the machine
- HSE GS6 avoidance of danger from overhead power lines.

Lifting

IMPORTANT: Before undertaking any lifting operations refer to SH9 STD 01 Management of Lifting Operations and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders).

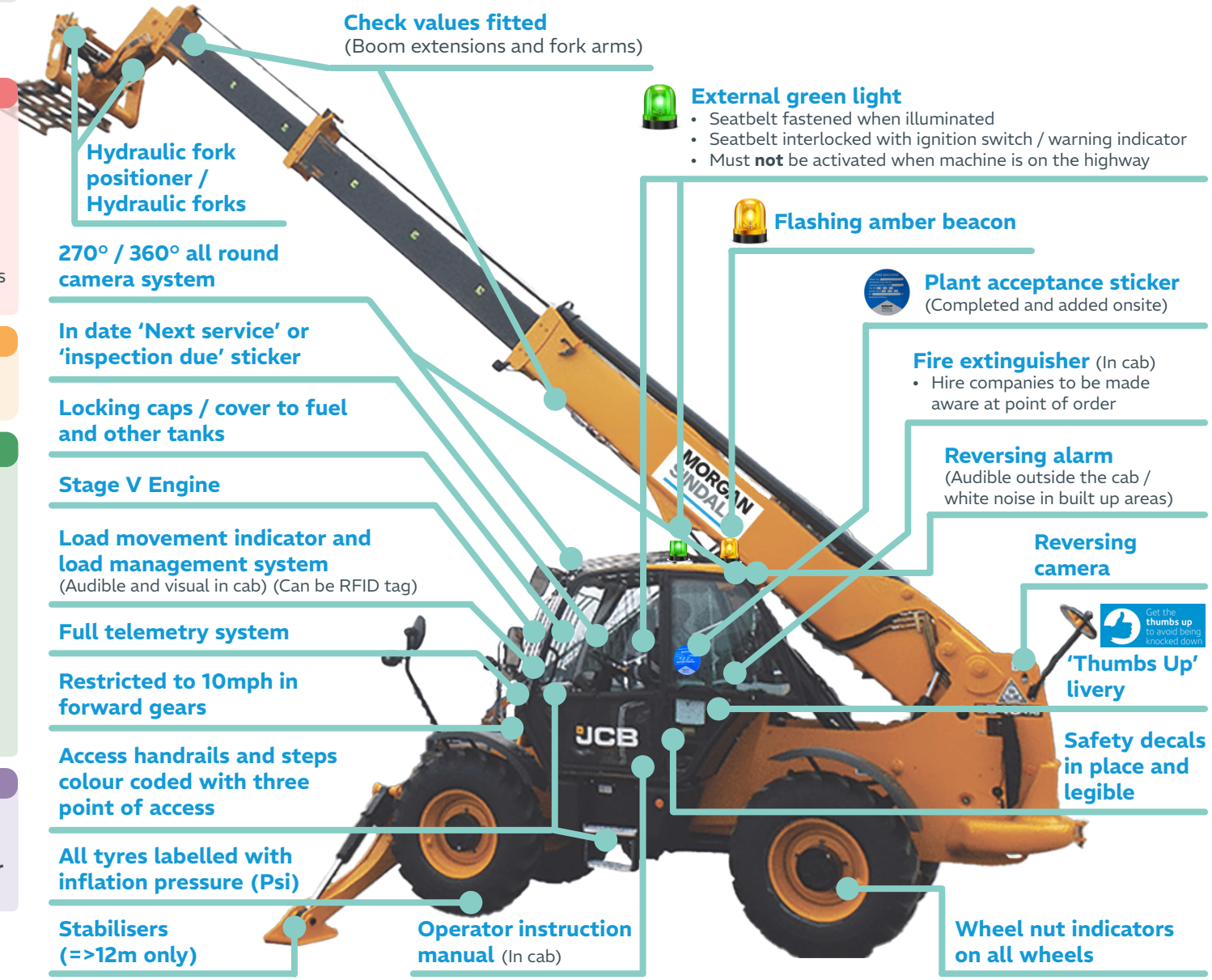
- Valid 12-month LOLER thorough examination certificate
- Valid six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Certified lifting points for all lifting duties
- **Lifting from forks (under slinging):** Proper attachments fixed with heel pins (not T screws) and specific lift plan
- Mechanical prop fitted under boom for maintenance.

Towing (hitch requirements)

- **Infrequent / ad-hoc towing of trailers / equipment less than 1000kg:** Standard hitch
- **Constant towing of trailers / equipment equal to or over 1000kg:** Hydraulic tow hitch (Agri Hitch system).

Mandatory requirements

Reminder: All plant and equipment must be inspected before first use, refer to PET FRM 02 - Plant arrival and pre-start check sheet



Back to contents page

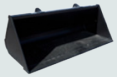
9.2 Standard Telehandlers (=>7m to =<20m)

Desirable (non-mandatory) plant

- Spill kit availability
- Battery-powered (electric) alternative
- Electronic safe to approach system (Mi Thumbs up / Digital Thumbs up)

Attachments

The table below details the compatible attachments for standard telehandlers.

Compatible attachments		7m	10m	14m	17m	18m	20m
	Fork extensions	✓	✓	✓	✓	✓	✓
	Waste Tipping Skip	✓	✓	✓	✓	✓	✓
	General Purpose Bucket	✓	✓	✓	✓	✓	✓
	Sweeper Attachment	✓	✓	✓	✓	✓	✓
	Roof Truss Jib	✓	✓	✓	✓	✓	✓
	Fork Mounted Hook	✓	✓	✓	✓	✓	✓

Useful resources

Click on the relevant image to watch the specific manufacturer's video for each topic area, where applicable.

Hydraulic fork positioner / forks

Load Management Systems / Moment Indicator (LMS / LMI)

Operator minimum requirements

Mandatory

- Hold a relevant and current competency card, which can be any of the following:
  - **CPCS**
    - **A17 (Endorsements A-E)**
      - A – Industrial Telescopic
      - B – Up to 9m
      - C – All sizes, ex. 360° slew
      - D – Superseded by A77 (see below)
      - E – Suspended load (non-rough terrain).
    - **A77 (Telescopic handler 360°) - above 9m only.**
  - **CPCS – NPORS (CSCS affiliated)**
    - **N010 (Telescopic handler)**
    - **N138 (Telescopic handler suspended loads).**
- **Driving licence:** Category B
- Authorised to drive on the public highway
- Always wear the seat belt
- Operate the plant and equipment in accordance with manufacturers instructions / guidance
- Competent in load management system and load management indicator
- Check ground conditions and weather, particularly before lifting activities
- Ensure the boom is always carried at a safe level in accordance with the manufacturers guidance
- Report all unsafe conditions, defects and behaviours to onsite supervisor
- Stop work if any unauthorised individuals enter the exclusion zones
- Mount and dismount the machine using the fixed access points and always face the machine using three points of contact
- Switch the vehicle off and remove keys from the ignition before leaving the vehicle unattended
- **Attachments:** Must be familiar and competent to use attachments
- **Site specific**
  - **PPE:** Comply with the PPE standards for the site and activity(ies) being completed. Must be non-loose fitting
  - **Induction:** Attend a full induction before starting work
  - **People Plant Interface:** Briefed on the site-specific Traffic Management Plan (TMP)
  - **Safe Systems of Work (SSoW):** Briefed and signed onto the appropriate SSoW for the task
  - **Daily inspections (pre-use and defects):** Complete daily inspection form PET FRM 04 and comply with onsite defect reporting system.

Desirable (non-mandatory)

- **Drugs and alcohol test:** Passed on induction and subject to ongoing medical screening / surveillance
- **Spills and environmental protection:** Competent (via assessment) in dealing with spills.

Back to contents page

MORGAN SINDALL INFRASTRUCTURE

9.3 Heavy lift telehandlers (=>7t to =<18t)

Built for demanding environments, these machines offer exceptional strength, stability, and load capacity. These machines handle large, heavy materials with ease while maintaining excellent manoeuvrability and are suitable for infrastructure projects.

Working and/or travelling on the Highway

- 'HIGHWAY MAINTENANCE' signage (140mm high)
- Insured
- Compliant with C&U Regulations
- VED registered
- Working lights and indicators
- Rear registration plate
- Control measures to prevent the striking of passing vehicles
- Forks secured / folded.

Working under or near overhead obstructions

- Height restrictions with indication on the machine
- HSE GS6 avoidance of danger from overhead power lines.

Lifting

IMPORTANT: Before undertaking any lifting operations refer to SH9 STD 01 Management of Lifting Operations and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders).

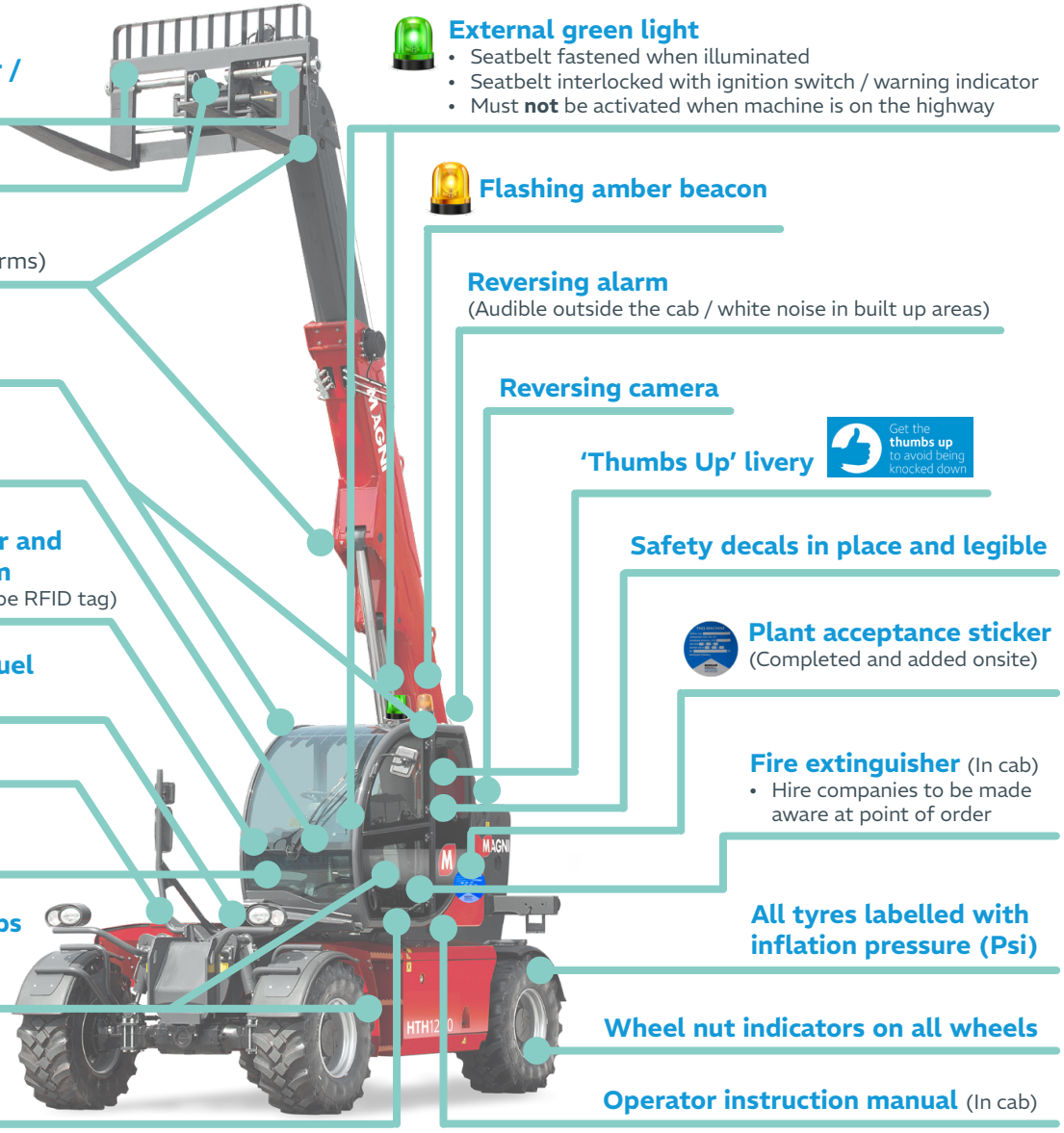
- Valid 12-month LOLER thorough examination certificate
- Valid six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Certified lifting points for all lifting duties
- **Lifting from forks (under slinging):** Proper attachments fixed with heel pins (not T screws) and specific lift plan
- Mechanical prop fitted under boom for maintenance.

Towing (hitch requirements)

- **Infrequent / ad-hoc towing of trailers / equipment less than 1000kg:** Standard hitch
- **Constant towing of trailers / equipment equal to or over 1000kg:** Hydraulic tow hitch (Agri Hitch system).

Mandatory requirements

Reminder: All plant and equipment must be inspected before first use, refer to PET FRM 02 - Plant arrival and pre-start check sheet



Back to contents page

9.3 Heavy lift telehandlers (=>7t to =<18t)

Desirable (non-mandatory) plant

- Spill kit availability
- Electronic safe to approach system (Mi Thumbs up / Digital Thumbs up).

Attachments

The table below details the compatible attachments for Roto telehandlers

Compatible attachments		Manitou				Merlo			Magni			
		9t	13.5t	16t	20t	7t	10t	12t	7t	12t	16t	20t
	Carriage hook	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Wide Carriage Forks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reduced Capacity Hydraulic forks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Coil lifter Mandated on all cable drum lifts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Lifting hook	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: All attachments must interface with the machine via an RFID tag system.

Useful resources

Click on the relevant image to watch the specific manufacturer's video for each topic area, where applicable.

Attachments and hydraulic locking hitch videos

Hydraulic fork positioner / forks

Load Management Systems / Moment Indicator (LMS / LMI)

Operator minimum requirements

Mandatory

- Hold a relevant and current competency card, which can be any of the following:
  - **CPCS**
    - **A17 (Endorsements A-E)**
      - A – Industrial Telescopic
      - B – Up to 9m
      - C – All sizes, ex. 360° slew
      - D – Superseded by A77 (see below)
      - E – Suspended load (non-rough terrain).
    - **A77 (Telescopic handler 360°).**
  - **CPCS – NPORS (CSCS affiliated)**
    - **N010 (Telescopic handler)**
    - **N138 (Telescopic handler suspended loads)**
- **Driving licence:** Category B
- Authorised to drive on the public highway
- Always wear the seat belt
- Operate the plant and equipment in accordance with the manufacturers instructions / guidance
- Competent in load management system and load management indicator
- Check ground conditions and weather, particularly before lifting activities
- Ensure the boom is always carried at a safe level in accordance with the manufacturer guidance
- Report all unsafe conditions, defects and behaviours to onsite supervisor
- Stop work if any unauthorised individuals enter the exclusion zones
- Mount and dismount the machine using the fixed access points
- Always face the machine using three points of contact
- Switch the vehicle off and remove keys from the ignition before leaving the vehicle unattended
- **Attachments:** Must be familiar and competent to use attachments
- **Site specific**
  - **PPE:** Comply with the PPE standards for the site and activity(ies) being completed. Must be non-loose fitting
  - **Induction:** Attend a full induction before starting work
  - **People Plant Interface:** Briefed on the site-specific Traffic Management Plan (TMP)
  - **Safe Systems of Work (SSoW):** Briefed and signed onto the appropriate SSoW for the task
  - **Daily inspections (pre-use and defects):** Complete daily inspection form PET FRM 04 and comply with onsite defect reporting system.

Desirable (non-mandatory)

- **Drugs and alcohol test:** Passed on induction and subject to ongoing medical screening / surveillance
- **Spills and environmental protection:** Competent (via assessment) in dealing with spills.

9.4 Roto (Rotational) telehandlers (=>21m to =<35m)

Back to contents page

MORGAN SINDALL INFRASTRUCTURE

These machines combine the lifting capability of a telehandler with the 360° flexibility of a crane. Ideal for confined or complex sites, they enable precise load placement at height or across obstacles without repositioning the machine.

Working and/or travelling on the Highway

- 'HIGHWAY MAINTENANCE' signage (140mm high)
- Insured
- Compliant with C&U Regulations
- VED registered
- Working lights and indicators
- Rear registration plate
- Control measures to prevent the striking of passing vehicles
- Forks secured / folded.

Working under or near overhead obstructions

- Height restrictions with indication on the machine
- HSE GS6 avoidance of danger from overhead power lines.

Lifting

IMPORTANT: Before undertaking any lifting operations refer to SH9 STD 01 Management of Lifting Operations and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders).

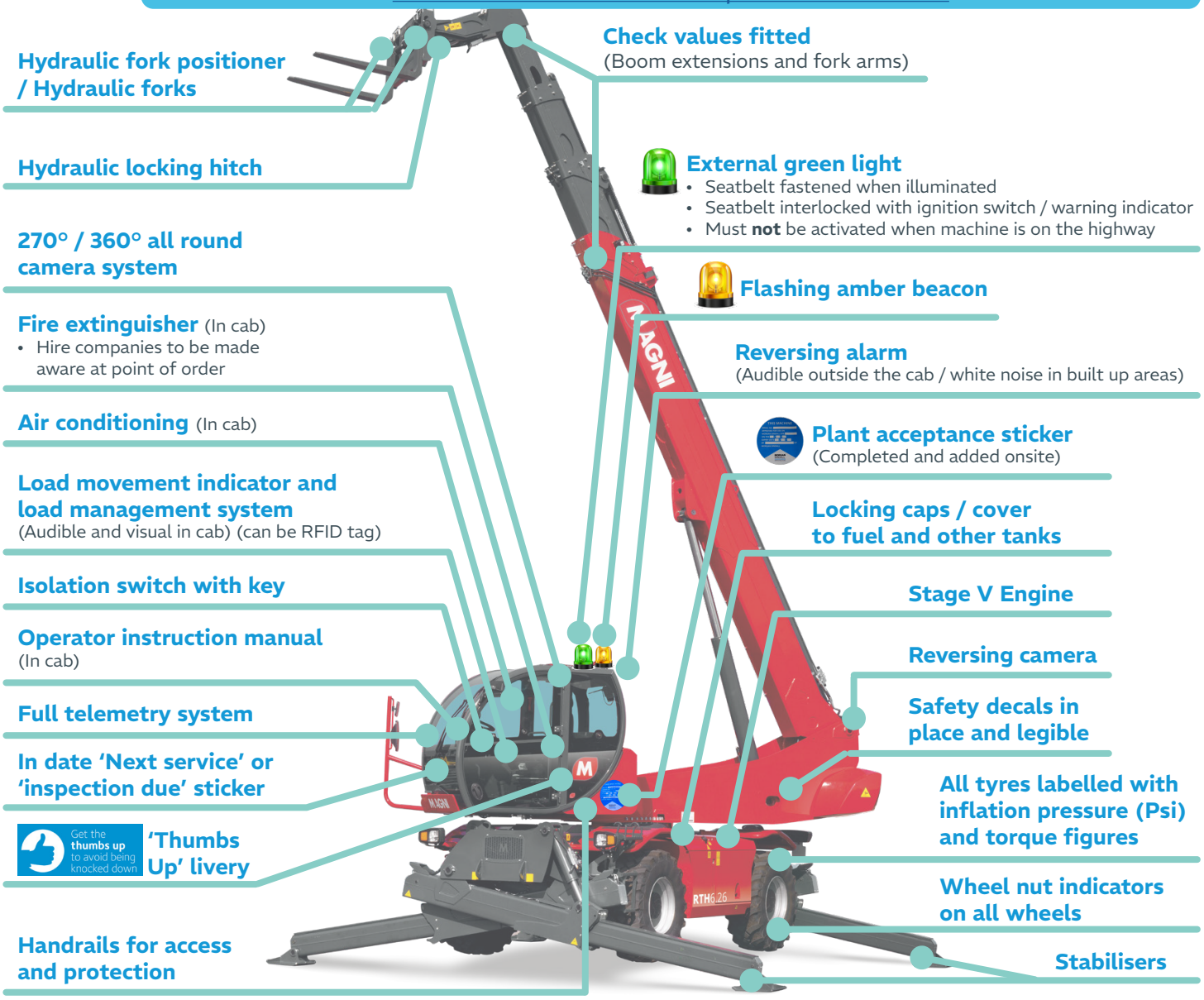
- Valid 12-month LOLER thorough examination certificate
- Valid six monthly LOLER certification for all on-board lifting tackle and/or fork attachments
- Certified lifting points for all lifting duties
- **Lifting from forks (under slinging):** Proper attachments fixed with heel pins (not T screws) and specific lift plan
- Mechanical prop fitted under boom for maintenance.

Towing (hitch requirements)

- **Infrequent / ad-hoc towing of trailers / equipment less than 1000kg:** Standard hitch
- **Constant towing of trailers / equipment equal to or over 1000kg:** Hydraulic tow hitch (Agri Hitch system).

Mandatory requirements

Reminder: All plant and equipment must be inspected before first use, refer to PET FRM 02 - Plant arrival and pre-start check sheet



Back to contents page

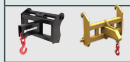
9.4 Roto (Rotational) telehandlers (=>21m to =<35m)

Desirable (non-mandatory) plant

- Spill kit availability
- Hybrid options e.g. Magni Twin Power
- Forward fork camera for working at height
- Electronic safe to approach system (Mi Thumbs up / Digital Thumbs up).

Attachments

The table below details the compatible attachments for Roto telehandlers.

Compatible attachments		Manitou				Merlo				Magni		
		21m	24m	25m	30m	24m	26m	30m	35m	26m	31m	35m
	Fork Extensions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Outrigger Pads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Carriage Hook	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Reduced Height Hook					✓	✓	✓	✓			
	Remote Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Box / Capacity Winch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Jib Extension	✓	✓	✓	✓	✓	✓	✓				
	Fly Jib Winch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Working Platform*	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

* Various sizes available, speak to hiring company on specific task to be undertaken

Note: All attachments must interface with the machine via an RFID tag system.

Useful resources

Click on the relevant image to watch the specific manufacturer's video for each topic area, where applicable.

Attachments and hydraulic locking hitch videos

Hydraulic fork positioner / forks

Load Management Systems / Moment Indicator (LMS / LMI)

Operator minimum requirements

Mandatory

- Hold a relevant and current competency card, which can be any of the following:
  - **CPCS**
    - **A17 (Endorsements D and E)**
      - D – Superseded by A77 (see below)
      - E – Suspended load (non-rough terrain).
    - **A77 (Telescopic handler 360°).**
  - **CPCS – NPORS (CSCS affiliated)**
    - **N010 (Telescopic handler).**
  - **IPAF**
    - **1b (if using integrated working platform 2-4m extendable).**
- **Driving licence:** Category B
- Authorised to drive on the public highway
- Always wear the seat belt
- Operate the plant and equipment in accordance with manufacturers instructions / guidance
- Competent in load management system and load management indicator
- Check ground conditions and weather, particularly before lifting activities
- Ensure the boom is always carried at a safe level in accordance with the manufacturers guidance
- Report all unsafe conditions, defects and behaviours to onsite supervisor
- Stop work if any unauthorised individuals enter the exclusion zones
- Mount and dismount the machine using the fixed access points and always face the machine using three points of contact
- Switch the vehicle off and remove keys from the ignition before leaving the vehicle unattended
- **Attachments:**
  - Must be familiar and competent to use attachments
  - **Remote control attachment:** Full familiarisation training must be completed and recorded by the manufacturer or hiring company to use this attachment.
- **Site specific**
  - **PPE:** Comply with the PPE standards for the site and activity(ies) being completed. Must be non-loose fitting
  - **Induction:** Attend a full induction before starting work
  - **People Plant Interface:** Briefed on the site-specific Traffic Management Plan (TMP)
  - **Safe Systems of Work (SSoW):** Briefed and signed onto the appropriate SSoW for the task
  - **Daily inspections (pre use and defects):** Complete daily inspection form PET FRM 04 and comply with onsite defect reporting system.

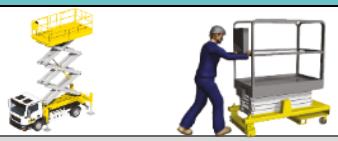
Desirable (non-mandatory)

- **Drugs and alcohol test:** Passed on induction and subject to ongoing medical screening / surveillance
- **Spills and environmental protection:** Competent (via assessment) in dealing with spills.

Back to contents page

10 Mobile Elevating Work Platform (MEWP) General

All plant must be inspected before first use, the appropriate pre-use inspection sheet must be completed, and daily recorded inspections thereafter.
For MEWPs, the category combines a machine Group (1, 2 or 3) and a machine Type (A or B). (See table below)

Cat.	Machine Type		Designated anchor point	Harness detection / Intelligent anchor point	Secondary guarding system
1A	Static vertical (Scissor)		✓		★
1B	Static Boom (includes spider type MEWP and vehicle mounted)		✓ Spider MEWPs only (See section 9.1)	✓ Vehicle mounted MEWPs only	✓ Anti entrapment device fitted
2A & 2B	Special machines		✓		
3A	Mobile Vertical (scissor)		✓		★
3B	Mobile Boom			✓	✓ Anti entrapment device fitted

★ By risk assessment, see the relevant section (Minimum requirement - scissor type MEWPs only (3A (mobile) and 1A (static) classification)) on the following pages.

Please note that specific client requirements regarding the use of harnesses, harness detection, and secondary guarding systems for the use of MEWPs on site may need to be applied in addition to Morgan Sindall Infrastructure minimum standards.

Back to contents page

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.
- SH14 STD 01 Safe planning and operation for Mobile Elevated Working Platforms (MEWPs) must also be used to ensure all the relevant processes and project controls are in place
- Refer to Appendix 2: Material handling attachments MEWPs.

Minimum requirements - plant - all MEWPs

- Current six monthly LOLER thorough examination certificate
- All MEWPs must adhere to EN280:2003 or later (introduction of load sensing at the platform)
- Controls should be designed in such a way as to protect against the risk of sustained involuntary operation. This can take the form of physical guards or standoff bars
- Direction of travel must be clearly indicated
- 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 and Appendix 2). Materials must NOT to be balanced on or against handrails. SH14 STD 01 Safe planning and operation for Mobile Elevated Working Platforms (MEWPs) must also be used to ensure all the relevant processes and project controls are in place
- Must not be operated whilst plugged in (battery powered / electric machines)
- Must be at ground level, when moving. Only fine control movements are permissible when the MEWP is in use at height
- Movement / travel alarm to be fitted, working and audible
- Outrigger / wheel loading details
- Emergency safe lowering systems, tested as part of pre-use checks
- SWL displayed in the platform and the manufacturer's machine information plate
- MEWPs used outside must be hybrid or EU Stage V compliant. Vehicle-mounted MEWPs – EURO 6 compliant engine as a minimum
- MEWPs used inside must be electric, bi-energy (range extender), or hybrid
- Tilt alarm fitted
- A MEWP acceptance check sheet (SH9 FRM 12) must be completed with each machine hire / delivery
- Shrouded controls must be used

- 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
  - Maximum permissible wind speed for MEWPs is 12.5mps (28mph).

Back to contents page

Minimum requirement – mobile boom type MEWPs (3B classification)
The below are in addition to the requirements listed for all MEWP above

- Flashing amber beacon whilst the machine is operating and travelling
- Have an intelligent anchor point and harness detection system fitted (See Appendix 7 SHEQ Bulletin – MEWPs). It is prohibited to interfere, tamper, or in any way seek to bypass the intended purpose of the device
- Have an anti-entrapment control device and audible warning alarm fitted that can be heard at ground level
- **Subcontractors / supply chain machines:** From 1 January 2025, 3B MEWPS must have an intelligent anchor point / harness detection system fitted. An intelligent anchor point / harness detection system is a device that notifies the operator that they are not attached to the anchor point by either an audible alarm or stopping the basket controls from any further action
- Secondary guarding
- Must be in a lowered position whilst travelling and banked into place by a qualified banksman as per the site layout plan

Minimum requirement - boom type MEWPs (1B classification)
The below are in addition to the requirements listed for all MEWP above

- Flashing amber beacon whilst the machine is operating and travelling
- Key out system for lorry-mounted booms (1B classification only) to allow safe operation with the ignition key removed
- Vehicle mounted must have intelligent anchor point
- Spider type MWEPs only have anchor points (Intelligent anchor points can't be fitted due to the nature of their use) (See 9.1 MEWP – Spider lift type only 1b)
- Must be in a lowered position whilst travelling and banked into place by a qualified banksman as per the site layout plan

Minimum requirement - Scissor type MEWPs only (3A (mobile) and 1A (static) classification)
The below are in addition to the requirements listed for all MEWP above

- "Walking the dog" (umbilical cable) practices must be followed when moving the MEWP into its desired work location
- Flashing beacon on scissor lift whilst the machine is operating and travelling
- A secondary guarding system must be used where there is a risk of entrapment. All tasks using scissor-type MEWPs must be risk assessed, to ensure appropriate mitigation factors and machine spec utilised. Please contact the Magnor Plant team, if you need any further clarification on this. Secondary guarding applies to all hired-in machines and from 1 January 2025 for all subcontractors' machines
- Harnesses must be worn at all times and must be attached to an intelligent anchor point before the machine is operated and the controls are engaged
- The operator must always be attached to a designated anchor point whilst the machine is being operated. Once the scissor type MEWP has been positioned at the point of work and the controls disengaged, the operator does not need to be attached and can move freely within the working platform.

Back to contents page

Minimum requirements – remote control
The below are in addition to the requirements listed for all MEWP above

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through detachable controls and umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating devices must be checked for operational function on a pre-use / daily basis
- Remote control units must be clean and free from damage, including the harness worn by the operator and umbilical cable (where relevant)
- Specific Emergency Recovery / Rescue Procedures must be established and effectively communicated and practised before work commences.

Minimum requirements – Chapter 8 1B vehicle mounted MEWPs only

- Refer to Section 1 ‘Introduction’ (above) for details on amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements – operator all MEWPs

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Category B driving licence for road use (1B vehicle mounted MEWPs only)
- Evidence of familiarisation training for the particular type of MEWP to be operated, including training in emergency recovery from the ground and provision of a second / safety person on the ground to operate the emergency lowering system
- Trained in the use of harnesses as appropriate. International Powered Access Federation (IPAF) certification of training, which is valid for five years
- Lift plan and/or permit to lift must be briefed and understood
- Operator to have passed drug and alcohol test on induction and subject to ongoing medical screening / surveillance
- Use of harness - a harness must be worn in a boom-type MEWP or in a scissor lift when travelling or when the controls are engaged and appropriate for specific use.

Desirable – All MEWPs

- Effective fleet management system should be used to drive efficiency and improve safety (see Sky Sentry on Nationwide Platforms Service Level Agreement)
- Fire suppression in the engine compartment if working in a zone of fire risk or if emergency basket-to-basket evacuation procedures are not practical
- MEWPs to have 110v supply available in basket pre-wired
- Toolbox equipment storage in basket.

Desirable - operator

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

Back to contents page

Hazards / risks

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

- Clearances between buildings / other platforms
- Falls from height / falling objects
- Ground conditions capable of withstanding imposed wheel track loadings
- Ground conditions / underground services – imposed wheel / outrigger loadings
- Ground conditions – floor voids not clearly marked or covered with plywood
- Handling materials on MEWP platforms can overload machinery or be at risk of falling
- High wind speed
- Interface with crane / load during lifting operations (e.g., if MEWP is used for completing joints) with consideration
- Operating in reversing mode
- Operator recovery from an incapacitated machine
- Overturning if lifting duties are exceeded or poor ground conditions
- Potential for clashes with other plant working in the vicinity
- Stability when travelling machine with the platform raised
- Uneven ground conditions and driving up ramps during travelling can create a risk of crush / impact injury.

Back to contents page

10.1 MEWP – Spider Lift Type Only (1B)

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH14 STD 01 Safe planning and operation for Mobile Elevated Working Platforms (MEWPs) must also be used to ensure all the relevant process and project controls are in place.
- Refer to Appendix 2: Material handling attachments MEWPs.

Minimum requirements - plant

- Current six-monthly LOLER thorough examination certificate
- A power failure emergency lowering facility must be fitted
- All engines (where fitted) must use the correct type of fuels and be compliant with EU Stage V
  - No petrol engines are acceptable under any circumstances
- Damage responsibility decals must be fitted
- Each machine must be supplied with four spreader pads of an appropriate standard size. Any site-specific load bearing must be discussed with the supplier when ordering
- If used to install materials, an appropriate material handling device must be used (refer to HSE Guidance GEIS 6 and Appendix 2)
- IPAF 1B safe driving advice decal must be fitted
- On lithium battery-powered machines, a charging decal must be fitted
- Must not be operated whilst plugged in (battery powered / electric machines)
- 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
- 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
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 and IPAF's *TE-1151-0923-2-en-GB* avoidance of danger from overhead electric power lines must be followed.
- Machines must have either an umbilical cord remote control or a radio remote control to drive them around. Detachable controls / umbilical cord must extend to allow the operator to work from a place of safety.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Evidence of familiarisation training for the model and variant of MEWP to be operated, including emergency recovery from the ground
- Any machine 30m working height or above to be supplied with an IPAF operator on the first day for extended familiarisation
- Trained in the use of harness as appropriate
- Operator to have passed drug and alcohol test on induction and subject to ongoing medical screening / surveillance
- Lift plan and/or permit to lift must be briefed and understood.

Desirable - plant

- A decal should be fitted indicating the safe angle and direction of any climb, the use of any safety chocks and the safe positioning of an operator when climbing gradients
- A facility for extending / retracting the tracks to make the machine wider or narrower
- Crane lifting attachment points should be marked with an appropriate decal
- All machines are fitted with the latest secondary guarding system and utilise material handling attachments where applicable. Refer to Appendix 2
- Where a machine can be run on battery or mains electricity, it should also be capable of running on either 240v or 110v.

Desirable - operator

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

Hazards / risks

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

- Incorrect set up of machine leading to instability or disablement
- Stability when driving over uneven or rough terrain
- Stability when driving the wrong way across side-to-side gradients
- Stability when driving with tracks / wheels retracted.

Back to contents page

11 Road Sweeper / Collector

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirements - vehicle

- All current certificates / service documents provided
- Current MOT plating certificate
- Current VED and operator 'O' licence displayed in the cab windscreen, where no exemption is applicable
- On the public highway – insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- Appropriate waste permits if leaving site and exemption / consent if disposing on site
- Dual gulley brush and wide main brush
- Gulley sucker and hand lance
- Park brake not engaged warning device
- 360˚ vision using mirrors and cameras
- Safe and clean access to cab
- Safe and clean access for refuelling
- Engine emissions are compliant with EURO 5
- Base colour to be conspicuous as per Chapter 8 requirements
- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- Autobrake / proximity system.

Minimum requirements - remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through an umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating devices must be checked for operational function
- Remote control units, including the wearing harness and umbilical cable (where relevant), must be clean and free from damage.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - FORS
- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- DVS – HGVs greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Minimum requirements - Chapter 8
- Refer to Section 1 ‘Introduction’ (above) for details on amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - operator
- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Calm Networks training in safe operation, use, cleaning, and storage of standpipes (training available through - www.waterservices.org.uk)
- Demonstrable training and experience in operation of sweeper / collector
- Operator to be Traffic Management (TM) trained in mobile works
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Seat belt must be worn.

Desirable - vehicle
- Tracker unit, isolation method independent of factory-fitted locks, locking caps / covers to fuel and all other tanks.

Desirable - emissions
- Engine emissions are compliant with EURO 6.
- Projects to consider the use of hybrid / electric sweeper.

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

Hazards / risks
Significant hazards / risks identified when operating the machine and for those adjacent to the machine:
- Danger of crushing under un-propped body
- Danger of flying debris during wash out of bin and filters or using hand lance
- Incorrect opening of the rear door or raising of body / travelling with the body in a raised position
- Incorrect or no documentation - Appropriate waste permits if leaving site and exemption / consent if disposing on site
- Uncontrolled disposal / discharge of waste.

Back to contents page

12 Compressors / Air Systems

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- Unique ID number to be displayed on the plate, including Vehicle Identification Number (VIN)
- Noise emissions label in compliance with Outdoor Noise Directive (OND) 2000/14/EC
- All current pressure systems regulation certificates in place
- 12-weekly inspection of running gear
- Integral fuel bunding for environmental protection
- Towing / lifting weight to be clearly displayed
- Wheel nut indicators
- Labelled each side with tyre inflation pressure and wheel nut torque figure
- Towing eye type attachment only
- Whip checks to be provided between hose and compressor and hose and tools
- Engine emissions are compliant with EU Stage IV.

Minimum requirements – Chapter 8

- Refer to the general minimum requirements section (above) for details relating to vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - operator

- Demonstrable training and experience in operation of compressor / air system
- Be familiar with HAVS monitoring requirements
- All hoses must be inspected regularly (daily, pre-use checks).

Desirable - plant

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

Back to contents page

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Damage to the jockey wheel due to misuse / lack of proper maintenance.
- Flying debris
- Manual handling when moving compressor and when using heavy attachments
- Noise and vibration
- Open hoses when the airline switched on
- Overturning
- Towing and lifting operations
- Trailing hoses.

13 Rollers

13.1 Ride on Compaction Roller

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - plant

- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- All current certificate / service documents
- Flashing amber beacon
- Brake efficiency testing to be carried out and recorded, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- External green light fitted to indicate when the seat belt is fastened, the exception to this being by risk assessment for plant machinery travelling on public highways
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended.
- Mirrors to satisfy one metre high at one metre distance visibility criteria
- 270° / 360° all-round visibility aids (camera system) to be fitted to all cabbed compaction Rollers only
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- Small machines – ROPS
- Large machines – ROPS and FOPS
- Safe and clean access to cab
- Safe and clean access for refuelling
- A clear safety zone around the operating areas
- Isolation switch with key
- Locking caps and covers
- Under seat starter / isolator pressure switch
- Engine emissions are compliant with EU Stage IV
- Automatic seat switch – cuts off the engine when the operator stands

Back to contents page

Back to contents page

up
- Fitted with front and rear scraper bars on drum/s
- Integral water supply to drum
- Full telemetry for machines 10t and above.

Minimum requirements - Chapter 8
- Refer to Section 1 'Introduction' (above) for details relating to beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - driver / operator
- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Operator must have a current driving licence (Category B) if driving on the public highway
- Authorisation required to drive roller on the public highway by site manager / contractor
- Seat belt must be worn.

Desirable - plant
- **Cabbed machines 10 tonne and above only**
  - Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
  - Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.
- Base colour to be conspicuous as per Chapter 8 requirements. Refer to Introduction (Section 1) for further details.
- Seat belt operation is interlocked with the ignition switch / warning indicator - cabbed machines only
- Isolation method independent of factory-fitted locks, locking caps / covers to fuel and all other tanks.

Desirable - emissions
- Engine emissions are compliant with EU Stage V.

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

Hazards / risks
Significant hazards / risks identified when operating the machine and for those adjacent to the machine:
- Effect on adjacent excavations, buried services or structures from vibration
- Noise and vibration
- Serious risk of overturning on inclines or when working on edges
- All hazards associated with an activity are to be risk assessed and, where necessary, supported by a specific method statement.
- Items of plant / rollers to be selected based on the task and the hazards associated with the working environment
- Setting to work briefings must be specific to the task and the location
- Plant must be operated on well-compacted ground, away from the leading edges, to reduce the risk of overturning.

Back to contents page

14 Dozers

14.1 Tracked Dozer

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirements - plant

- Flashing amber beacon
- Mirrors / to satisfy 1m high at 1m distance visibility criteria
- 270° / 360° camera system to be fitted to all machines
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS to cab structure
- If winch fitted – associated lifting gear to have current six-monthly LOLER thorough examination certification
- Safe and clean access to cab
- Safe and clean access for refuelling
- Seat belt operation interlocked with ignition switch / warning indicator
- Full telematics system
- Locking caps / covers to fuel and all other tanks
- Engine emissions are compliant with EU Stage IV.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Do not break ground unless briefed on, have received, and fully understood a permit to break ground
- Ensure the door is closed when the machine is operating
- Seat belt must be worn.

Desirable - plant

- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / DTU). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has

Back to contents page

been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Coloured card system for the operator to acknowledge the presence of other persons or vehicles
- Complete people exclusion zone around plant and operation
- FOPS to cab where there is a risk of falling debris
- 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
- Proximity detection system
- Track adjustment, particularly slackening, by competent personnel only with appropriate tools and PPE
- Two-way radio system / hands-free to communicate with the operator.

Desirable - emissions

- Engine emissions are compliant with EU Stage V
- Hybrid engine available for 6t tracked dozers.

Desirable - operator

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

Hazards / risks

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

- Falls from height when erecting GPS masts
- Reversing movements
- Risks of towed items, e.g., roller
- Serious risk of overturning on inclines or when working on edges
- Speed of machine movement – proximity of plant marshal
- Underground services.

Back to contents page

14.2Wheeled Loading Shovel

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Flashing amber beacon
- Brake efficiency testing to be carried out, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- External green light fitted to indicate when the seat belt is fastened, the exception to this being by risk assessment for plant machinery travelling on public highways
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended
- All round mirrors to satisfy 1m high at 1m distance visibility criteria –
- 270° / 360° camera system to be fitted to all machines
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- ROPS and FOPS cab structure
- Articulation lock must be fitted and operational
- Locking caps / covers to fuel and all other tanks
- Seat belt operation interlocked with ignition switch / warning indicator
- Full telematics system
- Power isolation switch with key
- Safe and clean access for refuelling and maintenance
- Safe and clean access to cab
- Engine emissions are compliant with EU Stage IV.

Minimum requirements - lifting

- Current 12-month LOLER thorough examination certificate
- Current six-month LOLER examination of all on-board lifting equipment or handling attachments
- Lifting duty chart displayed on the boom or in the cab

Plant and Equipment Minimum Standards

Back to contents page

- Machine lifting points / tie-down points must be clearly labelled and be in good condition
- Approved SSoW, lifting plan and permit to lift must be in place prior to operations commencing.

Minimum requirements - driver / operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- If driving on the public highway, the operator must have a current driving licence (category B) and be a minimum of 18 years of age
- All site speed limits must be briefed and complied with
- Authorisation to take plant onto public highway by site manager / contractor
- Ensure the door is closed when the machine is operating
- Seat belt must be worn.

Desirable - plant

- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / DTU). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8
- Automatic braking systems which stop the machine if an obstruction is detected
- Proximity detection system.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Operator falling from the machine when alighting or dismounting the machine
- Restricted visibility on larger machines or if travelling with the bucket raised too high
- Reversing movements
- Serious risk of overturning on inclines, soft or uneven surfaces
- Trapping fingers / hand in the door due to accidental closure.

Back to contents page

15 Agricultural Tractors (including JCB fastrac)

Self-propelled diesel-powered agricultural tractors

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.

Minimum requirements - plant

- An 'O' licence is required if the machine is used in a goods-carrying activity on the public highway (not including plant crossings). If required, the current operator 'O' licence must be displayed on the cab windscreen
- Tractors need to have a taxation class of General Haulage rather than agricultural tractor. They must be limited to 40kph; otherwise, operator licensing and tachographs may apply
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, rear registration plates)
- Flashing amber beacon
- Brake efficiency testing to be carried out and recorded, e.g., daily user park and service brake and dynamic brake efficiency test as recommended by the manufacturer
- External green light fitted to indicate when the seat belt is fastened, the exception to this being by risk assessment for a vehicle travelling on the public highway
  - Note: You can use an external green light on plant machinery when working on site or at works on the road, as any area closed off is no longer regarded as part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight and mirrors
- Audible reversing alarm audible outside of the cab
- Rear facing camera with screen mounted in cab
- ROPS and FOPS cab structure
- Front and rear work lights
- An appropriate maintenance programme must be agreed with the business unit transport manager or Magnor Plant fleet manager. The programme (inspections and intervals) will be subject to use and the type of work the machine is undertaking (e.g. site-based / operating on public highways)

Back to contents page

- If used for towing, hydraulic and/or air braking capability must be installed
- Locking caps / covers to fuel and all other tanks
- Locking doors with keys
- Fitted with a hydraulic hitch complete with an audible in-cab alarm
- Engine emissions are compliant with EU Stage IV.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Operator must have a current, relevant driving licence if driving on the public highway
- Authorisation required prior to driving on public highway by site manager / contractor
- Controls should be secured so that unauthorised operation is effectively prevented when the machine is not in use
- Do not use if the equipment is, or appears to be damaged
- Ensure the correct fuel type is used depending on the task.
- Ensure the machine is operated in accordance with the manufacturer's instructions and guidance
- If towing special consideration must be given to the weight being towed, the operator must consider stability when towing and must refer to the operator's manual prior to towing for weights and capabilities
- Not to be used for towing unless an approved and operational tow hitch is fitted
- Seat belt must be worn
- Stop work if any unauthorised / unsupervised personnel enter their immediate work area
- Total train weight must not exceed the rated payload of the machine.
- Tractor entitlement on a driving licence (category F) is the same as for any other vehicle. The licence categories / entitlements are based on towing vehicle and trailer weight / towing weight.
  - B: A vehicle up to 3500kg (car licence) with a trailer up to 750kg GVW
  - BE: as above with a trailer over 750kg
  - C1: a vehicle between 3500 and 7500kg with a trailer up to 750kg GVW
  - C1E: a vehicle between 3500 and 7500kg with a trailer over 750kg GVW
  - C1E entitlement gained pre- 01 January 1997: gross train weight 8250kg
  - C1E test passed post 01 January 1997: gross train weight 12,000kg
  - C: a vehicle over 3,500kg with a trailer up to 750kg GVW (class 2 HGV)
  - CE: a vehicle over 3,500kg with a trailer over 750kg GVW (class 1 HGV).

Desirable – Plant

- Seat belt operation interlocked with ignition switch / warning indicator
- Tractors with a speed of less than 40kmph should be fitted with an air brake system fitted
- Full telematics system.

Desirable – emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Safe and clean access into the cab before entering and dismounting,

as well as refuelling

- High risk of overturning at speed on inclines or when towing
- Only to be used on gradients within the machine's capabilities (please refer to the operator's manual).

15.1 Tractor Winches

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - plant

Back to contents page

- Supplied with lights and, if used on the public highway, compliance with C&U regulations – (VED registered, working lights, indicators, rear registration plates, etc.)
- Tractors need to have a 'Special vehicle type (engineering plant)' taxation class for use on the public highway
- **Speed limited to:** 40kph
- **Front loader forks fitted:** Must be hydraulic fork positioners / hydraulic forks
- Front and rear work lights
- Flashing amber beacon
- ROPS Structure
- Seat belts must be fitted and operational
- Mirrors / CCTV to satisfy 1m high at 1m distance 360° visibility criteria
- Rear facing cameras with screen mounted in cab
- Locking caps / covers to fuel and all other tanks
- Isolation switch with key
- If used for towing, must have hydraulic and air braking capability
  - Special consideration must be given to the weight being towed, especially for braking activities:
    - Operator must consider stability when towing and the operator must refer to the operator's manual prior to towing
    - Ensure the correct fuel type is used depending on the task.
    - Must have a current relevant driving licence if driving on the public highway
- Estop fitted to all winches
- Adequate guarding for winch
- Wireless remote control of winch (Wander Lead)
- BOS capstan winch
- Planetary gearbox driven hydraulic winch c/w internal spring-loaded pressure to release brake
- Automatic hydraulic rope grip clamp
- Foot pedal operation with direction and speed control.

Back to contents page

- Engine emissions are compliant with EU Stage IIIB.

Minimum requirements - operator

- Operators must be competent and have familiarisation training and hold a valid category on their driving licence
- **Driving licence requirements / entitlements:** Category B only (as vehicle tax classification is 'Specialist Vehicle (Engineering Plant)' for use on the public highway
- If operating onsite, see Appendix 5 for required competency cards
- Evidence of adequate winch and capstan winch training
- Full site-defined PPE must be worn – loose-fitting clothing must be avoided to prevent inadvertent operation of controls
- Seat belt must be worn
- Operator to mount and dismount machine using fixed access arrangements and always facing the machine using 3 points of contact
- Engine must be turned off if approached by others and keys removed from the ignition before leaving unattended for any reason
- Stop work if any unauthorised / unsupervised personnel enter their immediate work area

Desirable – plant

- Seat belt operation interlocked with ignition switch / warning indicator
- Full telematics system
- Hydraulic rams on engine compartment covers to prevent slamming.

Desirable – emissions

- Engine emissions are compliant with EU Stage V.

Hazards / risks

- Safe and clean access into cab and for refuelling
- High risk of overturning at speed and on inclines
- Effect of weather on visibility and working / traffic surfaces
- Only to be used on gradients within the machine's capability. (Refer to the manufacturer's manual)
- Do not use if the equipment is, or appears to be damaged
- No entry into the exclusion zone unless signalled by the operator
- Not to be used for towing unless an approved tow hitch is fitted.

Back to contents page

16 Concrete Mixer Truck

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - vehicle

- Current MOT plating certificate
- Current operator 'O' licence displayed in the cab windscreen
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- All current certificates / service documents provided
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- Safe access to all areas where the operator is required to work, including full handrail protection, etc.
- Engine emissions are compliant with EURO 5.

Minimum requirements - remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through an umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating devices must be checked for operational function
- Remote control units, including the wearing harness and umbilical cable (where relevant), must be clean and free from damage.

Minimum requirements - FORS

- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- DVS – HGVs greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Back to contents page

Minimum requirements - Chapter 8

- Refer to Section 1 ‘Introduction’ section (above) for details relating to amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - driver / operator

- Demonstrable training and experience in the operation of a mixer truck
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Seat belt must be worn.

Desirable - vehicle

- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- Isolation method independent of factory-fitted locks
- Locking caps / covers to fuel and all other tanks
- Provision and use of a ConcreteSock™, or equivalent, to prevent unwanted discharges from concrete truck mixers during transit (refer to EA innovation briefing 17 for further details - https://drive.google.com/file/d/1GAz48Ezk5msNiILYFcHcND9errcO-NfH/view)
- Statement on hours to next service.

Desirable - emissions

- Engine emissions are compliant with EURO 6.

Desirable - operator

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

Hazards / risks

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

- Danger of moving parts – rotating drum
- Danger of spills when filling or discharging or driving up steep inclines
- Hazard from concrete washout discharging
- Imposed loadings on underground services
- Noise and visibility
- Number of climbing operations in to and out of the cab and when inspecting drum contents
- Proximity to concrete skips being lifted
- Tripping over hoses on the ground or slipping on spills
- Work at height – access to the top of the tank / body.

Back to contents page

17 Vacuum / Suction Excavator

Lorry-mounted 26t and 32t machines complete with either a hydraulic or counterbalanced suction arm

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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General

- Utilising the no-dig suction excavation method for material removal, extraction, and excavation enables individuals to work across a vast 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, risk to the operative
- Vacuum / suction excavators are ideal for extracting and removing wet and dry materials (e.g., water, clay, soil, stones, dust, and ballast) via vacuum into a debris tank, immediately removing any unsightly debris from the working site. Suction excavation also helps reduce the need for additional equipment / vehicles to undertake the activity.
- If the vacuum/suction excavator is registered as a special-type vehicle, it cannot remove waste from the site via the public highway. **Only vacuum / suction excavators registered as conventional Heavy Goods Vehicles and taxed / VED accordingly can remove waste from the site. Refer to Appendix 9 or click here to access the document**
- The CPA provides useful guidance on the safe use of suction excavators (click here to view), and Force One, one of our preferred supply chain partners, has also produced a document summarising the guidance (click here to view). Both documents are in accordance with our standards.

Minimum requirements - vehicle / plant

- Current MOT plating certificate
- 'O' licence is required if the vehicle is used in a goods-carrying activity on the public highway (not including plant crossings). If required, the current operator 'O' licence must be displayed in the cab windscreen.
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- All machines need to have annual MOTs and main dealer inspection records (12 weekly)
- Ten weekly Driver Vehicle Standards Agency (DVSA) inspection
- Annual truck MOT
- Must have whole vehicle type approval if registered after Oct 2014
- Mirrors (including Class V & VI) / Closed-Circuit Television (CCTV) to satisfy 1m high at 1m distance 360° visibility criteria
- Reversing camera

Back to contents page

- Chapter 8 compliant, when working on the highway
- White noise reversing alarm audible outside of the cab
- All nozzles must be made of non-conductive material (PE plastic)
- Castled (sometimes described as serrated) design of nozzles is to ensure airflow is maintained when placed against the ground; it is not to be used to cut the earth when extracting soil
- Compressor hoses must be fitted with whip-check cables
- Edge protection or fall restraint arrangements where access to the vehicle body is required
- Ground piercing accessories must not be used unless agreed with the site before work commences and must always be subject to risk assessment
- Only non-conductive and/or insulated hand-held tools and air lances which incorporate 'Dead Man' trigger and guard are to be used
- Operating instructions must always be followed for the machine start-up and shut-down procedures
- Safe access to all areas where the operator and banksman are required to work
- Stabilisers must be fully extended before any tipping operation commences
- All tools must be made of non-conductive material
- Appropriate warning signage, including noise levels
- Emergency stops fitted front and rear
- First aid kit and eye wash in the cab
- Isolation switch with key
- Lights – Daylight running
- Lights – rear working
- Live tracking system
- Locking caps / covers to fuel and all other tanks
- Locking doors with key
- Park brake not engaged warning device
- **Rotating nozzles / heads are prohibited**
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.
- 360 camera system
- Independent isolation system
- Locking caps / covers to fuel and all other tanks
- Remote hydrostatic drive telematics system
- Engine emissions are compliant with EURO 5.

Minimum requirements - remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- Umbilical cords must only be used as a secondary option. Battery / remote units are preferred to allow the operative full movement around the working area without creating a hazard.
- One emergency stop button on the machine and one emergency stop button on the remote unit
- Operation of the emergency stop button and any other isolating devices must be checked for operational function
- Remote control units must be clean and free from damage, including the wearing harness and umbilical cable (where relevant)
- If remote control is used, specific emergency recovery / rescue procedures must be established, effectively communicated, and practised before commencing work.

Minimum requirements - FORS

- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- DVS – HGVs greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Back to contents page

Minimum requirements - Chapter 8

- Refer to Section 1 ‘Introduction’ (above) for details relating to amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - driver / operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Operators must hold the relevant competence card (CPCS / NPORS (CSCS affiliated)) and be able to provide evidence they have received familiarisation on the specific machine type / manufacture
- Training in the use of air-ex
- All operators must be trained in Working at Height to a recognised standard
- **Lone working is not permitted**
- **Lead operators:**
  - Must hold the relevant competency card (see Appendix 5) as a minimum and provide evidence they have received familiarisation training of 200 hours minimum** on the specific machine type / manufacture, or hold a blue NVQ Competent Operators Card, to operate alongside a red carded (trained operator) second support operative.
- **Second operative:**
  - The second / support operative must hold the relevant competency card (see Appendix 5) as a minimum. Suction excavators are a two-operator operation. The CPA Good Practice Guide outlines strong guidance away from lone working, and towards a fully qualified two-operator team.
- Point of Work (PoW) risk assessment must be undertaken by the operator before the commencement of works
- A safe system of work must be in place for all working at height activities, including hose blockage, maintenance and repairs
- A full exclusion zone must be established around the operation, which must include the operating radius of the boom as a minimum
- Do not break ground unless briefed on, have received, and fully understood a permit to break ground
- Excavator daily inspection checklist signed off
- Vehicle daily inspection checklist signed off
- Cease suction operations and turn off the engine if others enter the exclusion zone
- Golden Rule – Stop for Safety, and report to the site supervisor
- If fitted with a hydrostatic drive, an operator must be present in the driving seat in addition to the operator controlling the machine externally
- Never work below the boom of the arm
- Remain in control of the remote control unit at all times
- Seat belt must be worn (when driving)
- Spoil must be tipped to an agreed area
- Trial holes must be agreed with the customer and are subject to risk assessment
- Undergo a recorded annual operator assessment
- Work from a position of safety at all times
- Working hours to be legally compliant for HGV drivers (Working time regulations 1998, EU driving rules, GB domestic driver rules)
- Full face protection must be worn when using ground-engaging tools such as air or water lances, as well as hearing protection.
- Additional training e.g.
  - COSHH - re-fuelling / ad-blue / grease
  - Manual handling - lifting pipes / nozzles
  - Asbestos awareness - This is used to help identify any presence of asbestos in the ground.
- Operator to have passed drug and alcohol test on induction and subject to ongoing medical screening / surveillance

Back to contents page

- Operator to be competency assessed in dealing with spills and environmental protection
- Driver operator to have passed safety critical worker medical.

Desirable - plant

- Height and Slew limiting devices when working in lane closures / under overheads, etc.
- Nozzle secondary restraint system - when working on deep excavations and adding extensions is necessary. There have been instances of the clamps coming undone and nozzles falling into excavations, potentially harming people or damaging utilities.

Desirable - emissions

- Engine emissions are compliant with EURO 6.

Hazards / risks

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

- Public interface – working alongside pedestrians / vehicles / plant crossings
- Poor communication – communication protocols must be agreed with other team members before any work commencing
- Emergency procedures – the operator must communicate emergency arrangements and procedures to a ‘second man’. These procedures must be adhered to and practised 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 manoeuvring or reversing to commence unless authorised by a nominated vehicle marshaller in defined areas. Physical barriers containing full operating radius or reach of boom and/or hose nozzles prevent 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 the 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 isolate the machine when others approach the operator. Protection of open excavations to prevent slips, trips and falls
- Underground services – procedures and hierarchy procedures for identifying and locating underground services. Ground piercing accessories must not be used unless agreed with site before work commences and must always be subject to risk assessment
- Effects of ground conditions – compressed air or water can agitate and displace porous and semi-porous ground conditions. If the ground is parched and solid, water should be introduced and allowed to soak; an air-ex can then be used
- Working adjacent to live traffic
- Danger of crushing by boom or manoeuvring vehicle
- Danger or crushing under an un-propped body
- Disposal of waste products
- Do not operate if the machine is or appears to be damaged
- Controls should be secured so that unauthorised operation is effectively prevented when the machine is not in use
- Steel suction nozzles are not permitted
- Noise
- At no time must anyone work or walk underneath the boom or vacuum nozzle, whether it is being operated or not
- No entry into the exclusion zone unless signalled by the operator
- Non-invasive excavation techniques are to be used only as per the manufacturer's instructions
- Working adjacent to live traffic
- Working at height.

Back to contents page

18 Concrete Pump

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH15 STD 01 Safe use of concrete pumps must also be used to ensure all relevant project controls are in place.

Minimum requirements - plant

If truck mounted:

- Current MOT plating certificate
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- Reversing alarm fitted, working and audible outside the cab. In residential or built-up areas, this must be replaced with a white noise alarm
- Ball catcher fitted to discharge end during cleaning operations, blowing out the pipeline. In addition to this, normal ball washout procedure, sucking a ball back to receiving hopper under low pressure.
- Door lock keys supplied
- Handrails / edge protection on the body where access is required
- Locking caps and covers
- Park brake not engaged warning device.
- Remote controls for the operator
- Safe access for maintenance activities
- 360 camera system
- If used under overhead cables or obstructions:
  - Large boom machines to be fitted with EBC plus system
  - Height restrictors with indication on machine –
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.
- Engine emissions are compliant with EURO 5.

Minimum requirements - remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through an umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating

devices must be checked for operational function
- Remote control units, including the wearing harness and umbilical cable (where relevant), must be clean and free from damage.

Minimum requirements - FORS
- FORS compliant to silver standard (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- DVS – HGVs greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Minimum requirements - Chapter 8
- Refer to Section 1 'Introduction' (above) for details relating to amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - driver / operator
- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5
- Evidence of familiarisation training for the type of pump to be operated
- Evidence that the operator is medically fit to operate the pump
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with the current Driver CPC qualification
- Hand and skin dermatitis protection / monitoring
- Seat belt must be worn (when driving).

Desirable - plant
- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- Hands-free voice-activated radio communications between pump operator and concrete team / second man
- Illuminated pump control panel
- Nylacast outrigger pads
- Spill kit
- Telebelt material handling solution
- Load cell agitators
- Eco Pan – Concrete washout capture, removal, and recycling.

Desirable - emissions
- Engine emissions are compliant with EURO 6
- Consider electric static pumps and/or hybrid / diesel / electric 36m boom mobile pump.

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

Hazards / risks
Significant hazards / risks identified when operating the machine and for those adjacent to the machine:
- Blockages in pipework
- Boom clash with overhead obstructions, power lines, adjacent cranes
- Failure of pressurised lines and use of compressed air to clean pipes
- Hazard from concrete washout discharging
- Hazardous substances such as cement and additives
- Overturning – ground capable of withstanding imposed outrigger loadings
- Potential excessive noise
- Remote control operation
- Trapping / crushing of site operatives
- Uncontrolled discharge of waste concrete
- Vibration and manual handling when using a compressed air system
- Whip from flexible hoses
- For further guidance, refer to BS8476:2007 code of practice for using

Back to contents page

Back to contents page

concrete pumps. Also, British Concrete Pumping Group Publication Safe Use of Concrete pumps
https://www.cpa.uk.net/safety-and-technical-publications/concrete-pumping-guidance

Back to contents page

19 Concrete Extrusion Machine

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Current 12-month LOLER thorough examination certificate for lifting equipment
- Access platform with guardrail around horizontal auger to access the front of auger for cleaning and maintenance
- Adequate task working lights
- Elephant ears rubber guards fitted to both sides of the concrete feeder hopper
- Emergency stops
- Exclusion zone between tracks and adjacent to structures
- Fixed guards on horizontal auger incorporating isolation switches to immobilise auger when guards are removed
- Fixed hinged guard and access steps across concrete feeder hopper and fixed hinged guards to inclined auger
- Flashing amber beacons front and rear at a height not to interfere with driver visibility
- Handrail to sides of the inclined auger to facilitate the use of access steps
- Podium steps for access to inclined auger access steps
- Pressure washer to be available for cleaning off
- Rubber track bumper guards
- Solid guard rails around mould and driving platforms
- Steps fitted to access above guards and to mould and drive platforms
- Storage facilities for hand tools and lubricants etc
- Travel / movement alarm fitted (working and audible)
- Towing facility to facilitate lighting sets
- Working platforms to be kept clear from debris
- If used under overhead cables or obstructions:
  - Height restrictors with indication on the machine
  - HSE's GS6 avoidance of danger from overhead electric power lines must be followed.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- Evidence of appropriate training for extrusion machines
- Evidence of familiarisation training for the type of machine to be operated
- Evidence of pressure washer training
- Ensure that an exclusion zone is established with cones not fewer than 5m around the machine prior to movement of the machine (this forms part of RAMS)
- Hand and skin dermatitis protection / monitoring.

Desirable - plant

- Adequate lighting for night-time working as given in raising the bar standard guidance document RtB15 ‘Task lighting’
- Adjusting compensation plate
- Guards on conveyors
- Training records to be developed to show course content.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Hazards / risks

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

- Clothing snagged on the chute leading into the auger
- Entrapment by inserting limbs into moving machinery
- Ground conditions / imposed loadings on underground services
- Hazardous substances, e.g., concrete
- Noise and vibration
- Transportation, loading / unloading and fitting of moulds.

20 Mobile crushing plant

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - plant

- Crusher to be registered with the Environment Agency (EA) / Scottish Environment Protection Agency (SEPA)
- Maintenance records to be available
- Control functions are clearly marked on the machine and the remote control
- All exposed, contactable, moving parts are fully guarded
- Automatic greasing
- Conveyor fitted with trip wires (where not fully shrouded)
- Dust suppression fitted and operational
- Effective belt scrapers to prevent the build-up of material on the conveyor.
- Emergency stop controls available at various locations around the machine
- Flashing amber beacon
- Guards to be fitted with interlocks to prevent operation with guards removed
- If loading buckets are used, ensure that they are compatible with the capacity of the crusher
- Isolation procedure to ensure no person enters the hopper / crusher to clear blockages. Power must be switched off if any tools are to be used to dislodge material
- Isolation procedure with multi-locking main panel arrangement to facilitate safe maintenance
- Mechanical means to remove blockage, operated remotely
- Plant to be operated remotely or ensure that the ramp to the loading hopper is effectively bunded
- Provision of a safe area where the operator can view and monitor the performance of the feed hopper
- Stalled crusher procedure to ensure a safe system is in place to deal with the machine that has an installed underload
- Working platforms on the machine are in good order, and edge protection is secure and intact.

Back to contents page

- Engine emissions are compliant with EU Stage IIIB.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Trained in isolation and stalled crusher procedures
- Ensure a minimum 5m physical exclusion zone around the crushing area
- No access to the crusher when operational.

Desirable - plant

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

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator

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

Back to contents page

Hazards / risks

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

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

Back to contents page

21 Volumetric Mixer

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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Minimum requirements - vehicle

- Current MOT plating certificate
- Current operator 'O' licence displayed in the cab windscreen
- On the public highway - insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- Reversing lights and reversing alarm audible outside of the cab
- Chain inspection holes must be fitted with guards / covers
- Isolator for auger, belt, chains, and drives must incorporate a lock-out device
- Park brake not engaged warning device
- Safe access for refuelling and maintenance
- Safe access to volumetric mixer controls
- The auger guard must be fitted with an interlock device
- Engine emissions are compliant with EURO 5.

Minimum requirements - remote control

- If battery-powered, remote control units must be checked to ensure sufficient power is available for the intended operations
- If the remote control is operated through an umbilical cord, this must extend to allow the operator to work from a place of safety
- Operation of the emergency stop button and any other isolating devices must be checked for operational function
- Remote control units, including the wearing harness and umbilical cable (where relevant), must be clean and free from damage.

Minimum requirements - FORS

- FORS compliant (vehicle specification)
- For further guidance, refer to – https://www.fors-online.org.uk/cms
- DVS – HGVs greater than 12t GVW (category N3) and operating within the London Low Emission Zone must hold a DVS safety permit.

Back to contents page

Minimum requirements - Chapter 8

- Refer to Section 1 ‘Introduction’ (above) for details on amber colour beacons, vehicle conspicuity and highway maintenance signage requirements.

Minimum requirements - driver / operator

- Evidence of appropriate training and competence assessment for the machine (either by the manufacturer or in-house by an operator previously trained by the manufacturer)
- Minimum of Category C driving licence when the unit is over 7.5t GVW
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Fix safety chains prior to moving off with auger in the raised (and locked) position
- Seat belts must be worn
- Working hours to be legally compliant for HGV drivers (Working time regulations 1998, EU driving rules, GB domestic driver rules).

Desirable - vehicle

- For driving activities, seat belt operation interlocked with ignition switch / warning indicator
- Locking caps / covers to fuel and all other tanks.

Desirable - emissions

- Engine emissions are compliant with EURO 6

Desirable - operator

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

Hazards / risks

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

- Clothing snagged on the chute leading into the auger
- Entrapment by inserting limbs into moving machinery
- Hazardous substances, e.g., concrete.

Back to contents page

22 Side-by-side All-Terrain Vehicles (ATVs)



Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

- Sections 1 and 2 (above) contain information common to all items of plant and equipment covered by this standard, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to details contained below for this plant item
- Further guidance on using ATVs on Morgan Sindall Infrastructure projects can be found in 'PET1 GUID 13'.

General information

- ATVs are self-propelled, diesel / petrol-powered, with a payload capacity of up to 900kg
- There are two main types of ATVs used in off-road work in agriculture, forestry, and land-based industries. They are (**1**) Side-by-side, and (**2**) ***Sit-astride*** ATV's
  - Side-by-side ATVs, sometimes called Utility Vehicles (UTVs), are permitted for use on Morgan Sindall projects. They are designed to cope with a wide variety of off-road conditions, but if used carelessly, can very rapidly become unstable
  - ***NOTE: Sit-astride ATVs that may also be referred to as quad bikes are NOT permitted for use on Morgan Sindall projects***
- Most side-by-side vehicles can carry two occupants in this way; however, some vehicles are equipped with a second row of seating (and can therefore carry four occupants), while others have bench-style seats allowing up to three people to be seated in a row
- Most side-by-side vehicles have four wheels, although six-wheel and full and partially tracked versions are also available
- There is usually a cargo bed behind the seating area
- **All ATVs must be supplied without doors**.

Minimum requirements - plant

- If used on the Public Highway – insured and compliant with C&U regulations (VED registered, working lights, indicators, front and rear registration plates, etc.)
- All road wheels to be fitted with wheel nut indicators and tyre pressures and wheel nut torque settings to be displayed
- All seats fitted with a 3-point seat belt and operational
- External green light fitted to indicate when the seat belt is fastened, the exception to this being by risk assessment for vehicles travelling on public highways
  - Note: You can use an external green light on a vehicle when they are working on site or at works on the road, as any area closed off is no longer regarded as being part of the highway. They must not be used on the highway as this could be an offence under the Road Vehicle Lighting Regulations 1989, as amended.
- Flashing amber beacon
- Mirrors to satisfy visibility 1m high at 1m distance visibility criteria
- Reversing alarm to be fitted working and audible outside of the cab
- ROPS
- Maximum age of machine five years.

Back to contents page

If used for towing:

- ATV must be fitted with a manufacturer-approved tow hitch only
- If the ATV is fitted with a capstan winch, it must have a valid 12-month LOLER thorough examination certificate.

Minimum requirements – driver / operator

- It is a legal requirement for employers to provide adequate training for employees who use ATVs and to make sure that only employees who have received appropriate training in their safe use, including the use of any towed equipment or attachments, are permitted to ride them
- Details of suitable training courses are available from franchised ATV dealers, manufacturers' websites, LANTRA, the Forestry Commission, EASI (European ATV Safety Institute), the British Off Road Driving Association (BORDA) and through colleges and training providers
- All operators for ATVs must complete full product familiarisation training and or show proof that this has been completed within the last 24 months before operating the ATVs on site
  - Always operate / use the ATV in accordance with the manufacturer's instructions / recommendations
  - **ALL** passengers must receive awareness training prior to riding / travelling on ATVs.
- Operators must hold a driving licence (category B)
- Authorisation required prior to driving on public highway - by site manager / deputy
- Carry out safety checks and maintenance in accordance with the manufacturer's recommendations; for example - regularly check tyre pressures, brakes, controls, and general condition
- Don't overload racks
- Seat belt must be worn
  - The driver / operator is responsible for ensuring all passengers wear seat belts.
- Secure loads on racks and make sure they are not overloaded and evenly balanced
- Stick to planned routes, where possible, and walk new routes if necessary to check for hidden obstructions, hollows, or other hazards
- If towing is required:
  - Operator must be trained / experienced in towing and operational risk assessed
  - Operator must consider stability issues when towing, and the operator must refer to / comply with the manufacturer's recommended towing procedures and maximum weights
  - Register of persons authorised to tow must be maintained.

Desirable – emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator

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

Hazards / risks

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

- Being thrown off during vehicle overturns or after loss of control
- Being trapped / asphyxiated under an overturned vehicle
- Collisions with structures, trees, other vehicles, etc.
- Danger of overloading
- Pedestrians being struck or run over by ATV's
- Travelling over rough ground conditions

Contributory factors / underlying causes of injuries, incidents and near misses with ATVs can include:

- Age of the operator
- Excessive speed

Back to contents page

- Incorrect / lack of appropriate head protection
- Lack of formal operator training and / or experience
- Loss of control on a steep slope combined with other factors, for example, ground or load conditions
- Poor maintenance, for example, faulty brakes, incorrect tyre pressures, etc.
- Tipping on a bank, ditch, rut, or bump
- Towing excessive loads with unbraked equipment
- Unbalanced loads or overloading.

Back to contents page

23 Pumps

(Drainage and sewage, static and towable)

Drainage
Static 4' to 12'
Towable 4' only

Sewage
Static 4' to 12'
Towable 4' and 6'

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Section 5: 'Towable equipment'

- Refer to Section 5 (above) for the towable equipment inspection regime.

Minimum requirements - plant

- Engine emissions are compliant with EU Stage V
- Minimum 60 per cent efficiency at BEP (best efficiency point)
- Auto start / stop via float switches to reduce running hours and conserve fuel where possible
- Full telematics system
- Super silent canopy
- Fully bunded to contain 110 per cent of all onboard liquids (fuel, oils, coolant, etc.)
- Alarm flashing beacon
- HVO compliant.

Minimum requirements - operator

- 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 the operator's manual prior to towing.

Desirable - plant

- Long run base fuel tank, ideally minimum 100 hours at BEP
- Bund alert – level switch to prevent pump starting if bund is full. Reduces the risk of contaminated spillage
- Specified for use on clean water applications, proof of no sewage contamination.

Desirable - operator

- Receive appropriate training on best practice pump setup and daily checks.

Plant and Equipment Minimum Standards

Back to contents page

Hazards / risks

- Operator trained and competent
- Installation of hoses in a safe manner
- Suitable location to pump out
- Access and egress to pump location.

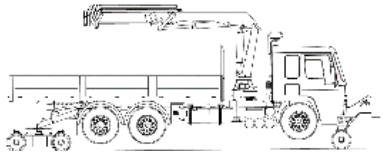
Back to contents page

24 On-Track Plant (OTP) – minimum requirements

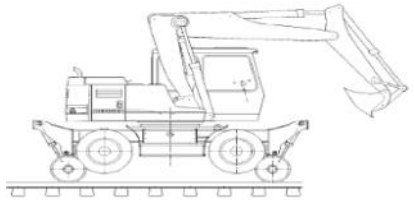
OTP consist of two types of plant:
i. Road / Rail Vehicles (RRVs)
ii. Demountables.

i. Road / Rail Vehicles:
RRVs can on-track themselves either through road wheels or via tracks and are classed as follows:

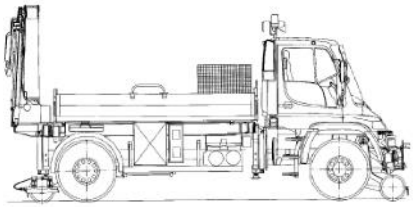
Type 9A: a high-ride RRV that has independent drive motors built into the rail wheel



Type 9B: a high-ride friction drive machine where the road wheels drive the rail wheels



Type 9C: a low-ride machine where the road wheels travel on the rail and are powered by the road wheels. The rail wheels are smaller in diameter than Type 9A and Bs and are there for guidance only.



Note: MSI preference is for type 9A vehicles wherever possible

ii. Demountables:

Demountables cannot on-track themselves. They are either lifted by hand, by a lorry loader, or using stillages and cross-tracking bars.

The following two photos are of demountables:
Demountable OTP GWS75

Geismar Ego 5

- Information (text) contained in this ‘General Minimum Requirements’ section is relevant to the safe management, operation and use of all On-Track Plant and equipment – as applicable and are **in addition** to those stated at the start of this standard.

Plant and Equipment Minimum Standards

Back to contents page

General
- All plant and equipment must be inspected prior to first use, the appropriate pre-start check sheet completed, and daily recorded inspections thereafter.
- Pre-use inspection signed off (all hire companies to supply operator pre-use inspection checklist Planned Preventative Maintenance (PPM)).
- Any new items of Rail plant not operated on a Morgan Sindall Infrastructure project; details of the Plant must be sent to the Professional Head of Plant / POS before the plant can be operated on any project.

Legal
- Compliant with current UK legislation
- Compliant with European Commission (EC) Machinery Directive 2006/42/EC, or United Kingdom Conformity Assessed (UKCA) certification, and supplied with a declaration of conformity.

Plant equipment and attachments
- Must meet engineering standard RIS-1530-PLT
- Built to W6a or Plant gauge
- Have a valid and in-date Engineering Conformance Certificate (ECC)
- Have an in-date brake certificate
- Have a valid product acceptance (PA) certificate for all equipment that is in scope
- Be fitted with a data logger, which must be secured if an accident or incident occurs
- Be fitted with equipotential bonding in accordance with the requirements set out in section 2.1 of RIS-2715-RST where able to come into contact with OLE
- Operator instruction manual available with plant or equipment
- All safety decals in place and legible
- Evidence of regular inspection plus ‘next service and or inspection due’ date / hours sticker
- Seat belt / belts must be fitted and operational
- Tyres labelled on each side with inflation pressure
- Fitted with working at height controls such as ‘boxing rings’, anchor points or other proprietary systems to prevent falling from height
- Suitable fire extinguisher
- First aid kit
- Appropriate size spill kit
- If fitted with a quick hitch, it must be a fully automatic twin lock and twin latch with the operating manual available
- Fitted with hydraulic fittings commensurate with attachments.

Colour coding:
a) White: Brake handwheels and levers, reservoir drain cocks, pneumatic system
b) Red: Emergency brake levers, doorway barriers, grease nipple locations, areas
around electrical safety bond connection points, the visible positive locking
c) Orange: Crane hook blocks, overhead warning line
d) Blue: Wheels and axles of insulated trolleys, road wheel rims of foam-filled tyres.

Lifting specific
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Trailers
- Must **not** have a floating axle like a Rexquote T4
- Must be fitted with twist locks to secure modules, man cages or similar

Back to contents page

Any Line Open (ALO)
- Meet the specification on page 10

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

Operator / driver (excluding non-working delivery drivers)
- Be competent for the plant to be operated with a Sentinel smartcard with competence in date for the type of machine and a company provided Authority to Work Card endorsed with the specific model of Plant they are to operate
- Hold level 1 medical requirements as detailed in NR/L2/OHS/00124
- Comply with pre-use and defect reporting systems
- Evidence of having signed onto the appropriate Safe System of Work (SSoW) documentation for the task
- Be briefed on the site-specific OTP Plan and lift plan where applicable and check for overhead obstructions and hazards
- Always operate / use plant and equipment in accordance with manufacturer's instructions / recommendations
- Wear a seat belt, where provided
- Use working at height protection provided when working at height
- Ensure the RCI is in 'lift mode' when carrying out lifting operations, where fitted
- Engine must be turned off and keys removed from ignition before leaving the vehicle unattended
- Operator to mount and dismount machine using fixed access arrangements, always using 3 points of contact.
- Any cab doors, engine panels or operating panels must be locked to prevent unauthorised access.

24.1 Road / Rail Vehicle – 360o Excavator / Excavator Cranes tracked or wheeled

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item.
- Content of section 23, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

Minimum requirements - plant

- Must be fully approved to RIS-1530-PLT for Network Rail and S1173 for London Underground rail infrastructures, which includes compliance to BS EN 280 as follows:
- Protected cab or FOPS cab structure where risk of falling objects
- Mirrors / CCTV to remove any blind spots
- Seat belts fitted and operational
- Locking doors with key
- Working at height controls to prevent the operator from falling from height
- Power source / engine type battery or hybrid is the preferred option, and if not, as a minimum engine emissions are compliant with EU Stage V.
- 12-monthly LOLER thorough examination certificate
- OEM Instruction manual for the operator, including emergency procedure and training
- The machine must be suitable for the location/hazards within the ECCs limitations for use
- SWL displayed at each load lifting point
- Hose protection to prevent chaffing / damage
- Hydraulic and pneumatic park and service brake with operating pressures stated on the headstock
- Lockable fuel filler caps or covered to prevent access
- Ability to tow / propel trailers.

Minimum requirements – lifting

- 12-monthly LOLER thorough examination certificate
- SWL displayed at each load lifting point and stated in the ECC
- RCI/L with supervisor key and blue light to indicate lift mode
- Must be fitted with slew and height MLDs to prevent infrastructure damage
- Burst hose protection on all applicable cylinders.

Back to contents page

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - operator

- Sentinel smart card endorsed with OTP core, Machine Operator—Excavator or excavator/crane, and a valid company issued Authority to Work card endorsed with the excavator to operate and the specific lifting accessory or attachment to use.
- Working at Height training.

Desirable - plant

- Option of twin cab version
- Type 9a
- Indication of speed in mph
- If tracked, it is preferable to have rubber pads with no exposed grousers
- RCI/L with the capability to import data from other systems, such as geofencing via an API
- Collision avoidance system
- Provision to carry emergency protection equipment.

Desirable - operator

- Trained in Non-Technical Skills with good communication
- Use of duplex comms.

Hazards / risks

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

- Working on steep gradients / runaway and failure to stop risks
- Low adhesion / increased braking distance, increase in failure to stop risk
- OLE / electrocution / infrastructure damage
- Buried services / strike
- Working at Height / falling from height
- Interface with trackworkers / collisions and personal injury
- Interface with OLE or structures / collision
- Overturning if lifting duties exceeded or cant limitation exceeded
- Other plant working in the vicinity / collisions.
- Travelling machine with boom raised / overturning or damage to infrastructure
- ALO / collision with trains
- Protruding grousers / rail head damage
- Road / Rail Access Point / overturning if counterweight on the low side of a high cant or unsuitable due to being less than the size required
- Use of attachments / non-compatible / affect stability
- On tracking at level crossings/interface with pedestrians or vehicles leading to collisions
- Travelling over level crossing / SPAD or collision when no local control
- S and C / points run-throughs.

24.2 Road / Rail Vehicle – Self-Propelled MEWP (Type 3B)

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- Content of section 23, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH14 STD 01 Safe planning and operation for Mobile Elevated Working Platforms (MEWPs) must also be used to ensure all the relevant project controls are in place.

Minimum requirements - plant

- Must be fully approved to RIS-1530-PLT for Network Rail and S1173 for London Underground rail infrastructures, which includes compliance to BS EN 280 as follows:
  - Existing MEWPs: BS EN 280:2013+A2:2015 or later (depending on the date of original CE or UKCA declaration)
  - New or recertificated MEWPs: BS EN 280-1:2022 and where appropriate BS EN 280-2:2022.
- Power source / engine type battery or hybrid is the preferred option, and if not, minimum engine emissions are compliant with EU Stage V
- Six-monthly LOLER thorough examination certificate
- OEM Instruction manual for the operator, including emergency lowering procedure and training
- Operating control functions clearly marked
- Keys must always remain in the ground control key switch when the boom is in use
- The machine must be suitable for the location / hazards
- Emergency recovery system with the process to follow on the ground controls to help those carrying out emergency recovery
- SWL displayed in the platform, which must be a minimum of 400kg
- Maximum permitted wind speed for safe operations must be displayed
- Wheel loading details provided, and ground bearing pressure required
- All MEWPs must have primary guarding of the controls and have secondary guarding to prevent entrapment / crushing through sustained involuntary operation of the controls or an approved risk assessment in place
- Sufficient number of work restraint anchor points, painted red and signage applied to ensure all are aware of the approved points to connect lanyards and the number of persons for which they are rated
- Sufficient number of emergency stop buttons (red)
- Type IIIB MEWPs must conform to the 'Harness On' intelligent anchor point system requirement. An intelligent anchor point system is a device that stops basket controls from operating unless the operator

Back to contents page

Back to contents page

has their harness lanyard karabiner connected to the device or where not fitted a suitable and sufficient risk assessment to be in place.

Minimum requirements - operator

- Sentinel smart card endorsed with OTP core, Machine Operator – Self-propelled MEWP and a valid company issued Authority to Work card endorsed with the specific MEWP to operate
- Lift plan must be briefed and understood
- Working at Height training and how to safely fit / use harness and lanyards.

Desirable - plant

- DSD vigilance system or resistive joysticks to prevent the device being used to keep the DSSD controls ‘active’
- Type 9a
- Basket load indication
- Indication of speed in mph.

Desirable - operator

- Trained in non-technical skills with good communication.

Hazards / risks

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

- DSD overridden / all controls active all the time
- Working on steep gradients/runaway and failure to stop risks
- Low adhesion / increased braking distance, increase in failure to stop risk
- OLE / electrocution
- Working at height / falling from a height or dropping tools and equipment
- High wind speed / overturning
- Interface with trackworkers/collisions and personal injury
- Interface with OLE or structures/collision
- Operator recovery from an incapacitated machine
- Overturning if lifting duties exceeded or cant limitation exceeded
- Other plant working in the vicinity / collisions
- Travelling machine with platform raised / overturning or damage to infrastructure
- ALO / collision with trains.

Back to contents page

25 LDP Piling Rig

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

General

- A large diameter piling rig with a width capacity of up to 3m diameter to a depth of up to 70m.

Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Compliant with current UK legislation
- Flashing amber beacon
- External green light fitted to indicate when the seat belt is fastened
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, cameras (270°/ 360°), radar - as applicable
- Reversing alarm to be fitted, working and audible outside of the cab
- Aircraft warning lights fitted (if working within 6km of airports or aerodromes)
- Access handrails and steps to be colour-coded, ensuring three points of access
- Door lock keys supplied
- Handrails must be fitted to the upper structure and running boards if access to height is required
- Motion alarms for slew and tracking must be fitted and operational
- No modification to the 'Dead Man' handle
- Rig instrumentation must be fitted to the rig to control / aid with the construction of the piles and meet the required specification
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Not to be used beneath or adjacent to overhead power lines or obstructions.
- Engine emissions are compliant with EU Stage IIIB

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements – crane

- Current 12-month LOLER thorough examination certificate for lifting equipment
- 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
- Current six-month LOLER thorough examination certification for all lifting accessories and attachments
- All D / Bow shackles used above 2m must be the Bolt Anchor Type (i.e., bolt, nut, and pin)
- All lifting accessories to be marked with SWL
- Auxiliary winch hook must be fitted with a safety catch
- Load-bearing hydraulic cylinders fitted with check valves
- Over-hoist cut-out device must be fitted and operational
- SWL to be clearly marked
- The auxiliary line must be fitted with an over-hoist limit switch
- The rig must be thoroughly examined within six months if the single line is to be used to lift people.
- Before any hired-in or subcontractor-owned piling / drilling rigs can commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit the site and inspect the piling / drilling rigs. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the inspection.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Ensure the machine is operated in accordance with the manufacturer's instructions and in accordance with their training
- Trained in lifting operations if using the auxiliary winch
- Trained in line with all associated works instructions / procedures / processes, which must include, but are not limited to, boring under fluids, coring, obstructions, dry bores
- Operator must stop work if any unauthorised / unsupervised personnel enter their immediate work area
- Must not track or slew the rig unless directed by a designated rig attendant.

Desirable - plant

- MEWP in full-time attendance to assist in rigging up, routine inspections and other maintenance operations
- Proximity detection equipment to be fitted to the rig
- Seat belt operation is interlocked with the ignition switch / warning indicator.
- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.

Back to contents page

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable - operator / supervisor

- A crane supervisor to be on site
- Operator to be slinger / signaller trained
- Operator to hold a current driving licence
- Operator to be competency assessed in dealing with spills and environmental protection.

Hazards / risks

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

- By removal of obstructions
- Caused by soft spots
- Due to obstructions that have not been suitably backfilled after removal
- Due to operating on inadequately prepared piling platforms
- Due to poor definition of the edge of the piling platform
- Due to strong winds. **Must have an anemometer on site**
- Of mast or rig due to failure to follow the manufacturer's guidelines on mast inclination
- Underground services
- Whilst travelling on inappropriate access ramps where gradients are not within the stability constraints of the rig.

Other:

- Being struck by bore spoil while spinning off pile arisings
- Being struck by items falling from a height
- Being struck by plant and vehicles or piling rig hitting plant or vehicles
- Component failure caused by rig maintenance not being carried out in line with the manufacturer's guidelines
- Entrapment between pile casings and rig ballast
- Falling into open bore because the pile casings are too low during digging, cage placement and concreting operations
- Hydraulic hose failure and spray of hydraulic oil due to hose burst
- Installing piles adjacent to the site hoarding or third parties
- Operatives falling into bores that have not been suitably backfilled or suitably fenced off
- Over rotation / dig of the auger that affects the stability of the rig during pre-bore
- Over rotation of the auger, resulting in undermining and subsequent damage of adjacent structures.

Back to contents page

26 Mini Rotary Piling Rig

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

General

- Diesel-powered tracked mini rotary rig capable of CFA, Rock Anchor, DTH, Supa Jaw, Micro Piling, Odex Drilling, and Soil Nailing applications.

Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Compliant with current UK legislation
- Ability to restrict the working speed of the rotation whilst the gate is open
- 'Dead Man' button
- Safety gate to be always in place
- Not to be used beneath or adjacent to overhead power lines or obstructions
- Engine emissions are compliant with EU Stage IIIB.

Minimum requirements - crane

- Current 12-month LOLER thorough examination certificate for lifting equipment
- Current six-month LOLER thorough examination certification for all lifting accessories and attachments
- All lifting accessories to be marked with SWL
- Auxiliary winch hook must be fitted with a safety catch
- Over-hoist cut-out device must be fitted and operational
- SWL to be clearly marked.
- Before any hired-in or subcontractor owned piling / drilling rigs are allowed to commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit site and conduct an inspection of the piling / drilling rigs. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the inspection

Minimum requirements – operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix
- Ensure the machine is operated in accordance with the manufacturer's instructions and in accordance with their training
- Trained in line with all associated works

Back to contents page

- Understand and follow the specific site lift plan for the rig they are operating
- Operator must stop work if any unauthorised / unsupervised personnel enter their exclusion zones.

Desirable - plant

- Computer-monitored piling system to be fitted
- GPS tracker unit installed
- Locking caps / covers to fuel and all other tanks
- Remote Control Loading / Unloading
- Remote Control Operation (all functions)
- Seat belt operation is interlocked with the ignition switch / warning indicator.
- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator / supervisor

- Operator to hold a current driving licence
- Operator to be Crane lift supervisor trained
- Operator to be competency assessed in dealing with spills and environmental protection.

Hazards / risks

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

- Being struck by items falling from a height
- Being struck by plant and vehicles or piling rig hitting plant or vehicles
- Component failure caused by rig maintenance not being carried out in line with the manufacturer's guidelines
- Consider the risk of accessories – e.g., hammer
- Entanglement – gate on the rig to be always closed whilst rotary works are conducted
- Excessive noise and vibration from Piling Operation
- Hydraulic hose failure and spray of hydraulic oil due to hose burst
- Installing piles adjacent to the site hoarding or third parties
- Overturning if lifting duties exceeded
- Precast concrete pile shearing while being driven
- Trapping of site operatives – All movements to be always supervised by a plant and vehicle movement marshal
- Underground services.

Back to contents page

27 CFA Piling Rig

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

General

- Continuous flight auger piling rig capable of a boring depth between 10m and 33m and up to 1.2m diameter.

Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Compliant with current UK legislation
- Flashing amber beacon
- External green light fitted to indicate when the seat belt is fastened
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, cameras (270° / 360°), radar - as applicable
- Reversing alarm to be fitted, working and audible outside of the cab
- ROPS and FOPS cab structure
- Aircraft warning lights (if working within 6km of airports or aerodromes)
- Access handrails and steps to be colour-coded, ensuring three points of access
- Locking doors with key
- Handrails must be fitted to the upper structure and running boards if access to height is required
- Motion alarms for slew and tracking must be fitted and operational
- Must be fitted with 'hold to run' levers
- No modifications to the machine's 'Dead Man' handle
- Rig instrumentation must be fitted to the rig to control / aid with the construction of the piles and meet the required specification
- Safe access for refuelling, maintenance and to any place where accessories are stored
- An auger cleaner must be fitted to prevent spoil flighting up the auger string
- An external 'Emergency Stop' must be fitted
- Auger guarding must be fitted to the mast, ensuring that no one comes in contact with the rotating auger
- Blow-out adaptors must have two air exhaust valves fitted and a pressure gauge to identify the pressure within the pumping lines clearly
- Isolation switch with key
- Protective mesh / guard must be installed to the window on the jib side of the cab if the window is an opening type
- Rubber concrete pipes fitted at height on the rig must have whip

Back to contents page

checks fitted to all joints
- Have a mechanical auger cleaner fitted
- The auger cleaner must be fitted with a secondary restraint to prevent components from falling from it
- The concrete Loop hose over its entire length must be doubled-bagged
- Not to be used beneath or adjacent to overhead power lines or obstructions.
- Engine emissions are compliant with EU Stage IIIB.

Minimum requirements - crane

- Current 12-month LOLER thorough examination certificate for lifting equipment
- Current six-month LOLER thorough examination certification for all lifting accessories and attachments
- All D/Bow shackles used above 2m must be the Bolt Anchor Type (i.e., bolt, nut, and pin)
- All lifting accessories to be marked with SWL
- Auxiliary winch hook must be fitted with a safety catch
- Load-bearing hydraulic cylinders fitted with check valves
- Over-hoist cut-out device must be fitted and operational
- SWL to be clearly marked
- Before any hired-in or subcontractor owned, piling / drilling rigs is allowed to commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit site and conduct an inspection of the piling / drilling rigs. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the inspection

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Ensure the machine is operated in accordance with the manufacturer's instructions and in accordance with their training
- Trained in lifting operations if using the auxiliary winch
- Trained in the operation of the auxiliary winch in association with all lifting operations
- Operate the rig to prevent excessive swing of the load during movement
- Operator must stop work if any unauthorised / unsupervised personnel enter their exclusion zones. The auxiliary line must be fully lowered to the ground to prevent the wire rope or hook assembly from fouling on the rotary table.

Desirable - plant

- Audible / visual slew alarm
- Auger gate canopy fitted to cover the rig attendant when placing the auger cap
- Computer-monitored piling system to be fitted
- Hydraulic rams on engine compartment covers to prevent slamming
- Independent isolation system
- Locking caps / covers to fuel and all other tanks
- MEWP in full-time attendance to assist in rigging up, routine inspections and other maintenance operations.
- Proximity detection equipment to be fitted to the rig
- Rear-facing, counterweight-mounted CCTV cameras
- Seat belt operation interlocked with ignition switch / warning indicator
- Tracker unit
- Travel movement alarm
- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all

hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition

- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator / supervisor

- A crane supervisor to be on site
- Operator to be slinger / signaller trained
- Operator to hold a current driving licence
- Operator to be competency assessed in dealing with spills and environmental protection.

Hazards / risks

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

- By removal of obstructions or bores not suitably backfilled after removal
- Caused by soft spots
- Due to operating on inadequately prepared piling platforms
- Due to poor definition of the edge of the piling platform
- Due to strong winds. **Must have an anemometer on site**
- Due to the rig being manoeuvred on its jack-up legs
- Whilst travelling on inappropriate access ramps where gradients are not within the stability constraints of the rig
- Of the mast or rig due to failure to follow the manufacturer's guidelines on mast inclination.

Back to contents page

Other:

- Being struck by bore spoil while spinning off pile arisings
- Being struck by items of plant falling from a height
- Being struck by plant and vehicles or piling rig hitting plant or vehicles
- Component failure caused by Rig Maintenance not being carried out in line with the manufacturer's guidelines
- Installing piles adjacent to the site hoarding or third parties
- Operatives falling into bores not suitably backfilled / suitably fenced off
- Entrapment caused by coming into contact with the rotating auger
- Flighting – over rotation of the auger resulting in affecting the stability of the rig or undermining and subsequent damage of adjacent structures or previously constructed fluid piles
- Hydraulic hose failure and spray of hydraulic oil / Concrete due to hose burst caused by worn or damaged hoses
- People and property being struck by concrete during the clearing of blockages from within the pumping lines
- Piles constructed do not meet the required specification
- Reinforcing cages / bars falling from height during the cage installation process
- Rig malfunction
- Slumping of piles due to inadequate pile sequencing
- Unauthorised personnel within the piling area.

Back to contents page

28 Driven Piling Rig

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

General

- As standard driven piling rigs can be fitted with 3, 4, 5 and 6t hammers.

Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Compliant with current UK legislation
- Flashing amber beacon
- External green light fitted to indicate when the seat belt is fastened
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, cameras (270° / 360°), radar - as applicable
- Reversing alarm to be fitted, working and audible outside of the cab
- Aircraft warning lights (if working within 6km of airports or aerodromes)
- Access handrails and steps to be colour-coded, ensuring three points of access
- Door lock keys supplied
- Handrails must be fitted to the upper structure and running boards if access to height is required
- Motion alarms for slew and tracking must be fitted and operational
- Must be fitted with 'hold to run' levers
- No modifications to the machine's 'Dead Man' handle
- Safe access for refuelling, maintenance and to any place where accessories are stored
- Not to be used beneath or adjacent to overhead power lines or obstructions
- Engine emissions are compliant with EU Stage IIIB.

Minimum requirements - crane

- Current 12-month LOLER thorough examination certificate for lifting equipment
- Current six-month LOLER thorough examination certification for all lifting accessories and attachments
- Before any hired-in or subcontractor owned, piling / drilling rigs is allowed to commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit site and conduct an inspection of the piling / drilling rigs. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the

Back to contents page

inspection
- All D/Bow shackles used above 2m must be the Bolt Anchor Type (i.e., bolt, nut, and pin)
- All lifting accessories to be marked with SWL
- Auxiliary winch hook must be fitted with a safety catch
- Over-hoist cut-out device must be fitted and operational
- SWL to be clearly marked
- The auxiliary line must be fitted with an over-hoist limit switch
- The rig must be thoroughly examined within six months if the single line is to be used to lift people.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Ensure the machine is operated in accordance with the manufacturer's instructions and in accordance with their training
- Trained in lifting operations
- Trained in line with all associated works
- Understand and follow the specific site lift plan for the driven rig they are operating
- Instructions / procedures / processes which must include, but are not limited to, unloading precast piles, drawing a precast pile into the rig and jointing precast piles
- Operator must stop work if any unauthorised / unsupervised personnel enter their exclusion zones
- Must not track or slew the rig unless under direction from a designated rig attendant
- Use safe communication via two-way radio systems.

Desirable - plant

- Computer-monitored piling system to be fitted
- GPS tracker unit installed
- Locking caps / covers to fuel and all other tanks
- Proximity detection equipment to be fitted to the rig
- Seat belt operation interlocked with ignition switch / warning indicator
- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator / supervisor

- Operator to be Crane lift supervisor trained
- Operator to hold a current driving licence
- Operator to be competency assessed in dealing with spills and environmental protection.

Back to contents page

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

- By removal of obstructions
- Caused by soft spots
- Due to obstructions which have not been suitably backfilled after removal
- Due to operating on inadequately prepared piling platforms
- Due to poor definition of the edge of the piling platform
- Due to strong winds. **Must have an anemometer on site**
- Of mast or rig due to failure to follow the manufacturer's guidelines on mast inclination
- Underground services
- Whilst travelling on inappropriate access ramps where gradients are not within the stability constraints of the rig.

Other:

- Being struck by items falling from height, e.g., timbers packings / concrete and hammer helmet retaining bolts vibrating loose
- Being struck by plant and vehicles or piling rig hitting plant or vehicles
- Component failure caused by rig maintenance not being carried out in line with the manufacturer's guidelines
- Entrapment between pile casings and rig ballast
- Excessive noise and vibration from repeated blows of the pile
- Hydraulic hose failure and spray of hydraulic oil due to hose burst
- Installing piles adjacent to the site hoarding or third parties
- Precast concrete pile shearing while being driven
- A rope failure causing the hammer or pile section to runaway down the mast
- Instability of the rig due to failure or non-compliance with the lift plan
- Pile section clashing with delivery wagons while being loaded or unloaded
- Subcontractors, e.g., test and set out engineers operating in the rig's exclusion zones.

Back to contents page

29 Piling Rigs Vibro

Sections 1 and 2: 'Introduction' and 'General Minimum Requirements'

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- Content of sections 1 and 2, as applicable, must be followed to promote and ensure safe operation and use, in addition to the details contained below for this plant item
- SH9 STD 01 Lifting Operations – The Control and Safe Use of Cranes and SH9 STD 02 Lifting Operations (Excavators Telehandlers Lorry Loaders) Standard must also be used to ensure all the relevant processes and controls are in place.

General

- Steel casing vibro piling rig up to 600mm in diameter and up to 40m in length.

Minimum requirements - plant

- CE Declaration of Conformity and current test certificate
- Compliant with current UK legislation
- Flashing amber beacon
- External green light fitted to indicate when the seat belt is fastened
- 360° visibility criteria to satisfy 1m high at 1m distance, using line of sight, mirrors, cameras (270° / 360°), radar - as applicable
- Reversing alarm to be fitted, working and audible outside of the cab
- ROPS and FOPS cab structure
- Aircraft warning lights (if working within 6km of airports or aerodromes)
- Access handrails and steps to be colour-coded, ensuring three points of access
- Locking doors with key
- Handrails must be fitted to the upper structure and running boards if access to height is required
- Motion alarms for slew and tracking must be fitted and operational
- Must be fitted with 'hold to run' levers
- No modifications to the machine's 'Dead Man' handle
- Safe access for refuelling, maintenance and to any place where accessories are stored
- A sledge-over-hoist knock-out system must be fitted
- An external 'Emergency Stop' must be fitted
- Isolation switch with key
- Protective mesh guard must be in place to the side of the cab on the jib side if the window is an opening type
- Safe and clean access to the cab
- Not to be used beneath or adjacent to overhead power lines or obstructions.
- Engine emissions are compliant with EU Stage IIIB.

Plant and Equipment Minimum Standards

Back to contents page

Minimum requirements - crane

- Current 12-month LOLER thorough examination certificate for lifting equipment
- Current six-month LOLER thorough examination certification for all lifting accessories and attachments
- Before any hired-in or subcontractor owned, piling / drilling rigs is allowed to commence work on any contract, a Morgan Sindall / Magnor Plant approved plant engineer must visit site and conduct an inspection of the piling / drilling rigs. The work must be planned so that Magnor Plant is given a minimum of seven days' notice to plan to undertake the inspection
- All D/Bow shackles used above 2m must be the Bolt Anchor Type (i.e., bolt, nut, and pin)
- All lifting accessories to be marked with SWL
- Load-bearing hydraulic cylinders fitted with check valves
- Over-hoist cut-out device must be fitted and operational
- SWL must be clearly displayed
- The auxiliary line must be fitted with an over-hoist limit switch.

Minimum requirements - operator

- A listing of competence cards, accepted by Morgan Sindall Infrastructure, is included in Appendix 5 (at the end of this document)
- Ensure the machine is operated in accordance with the manufacturer's instructions and in accordance with their training
- Trained in lifting operations if using the auxiliary winch
- Operator must be familiar with the pile jointing method and safe systems of work
- Operate the rig to prevent excessive swing of the load during movement
- Operator must stop work if any unauthorised / unsupervised personnel enter their exclusion zones.

Desirable - plant

- Complete people exclusion area around plant and operation (5m)
- Isolation method independent of factory-fitted locks
- Live tracking system
- Locking caps / covers to fuel and all other tanks
- Proximity detection sensors to be fitted and operational
- Seat belt operation interlocked with ignition switch / warning indicator
- Human Form Recognition cameras – maximum detection area of 360° recording (250° visibility and 360° recording). From 1 June 2024 for all hired-in plant and 1 January 2025 for subcontractors. Refer to PET GUID 01 Human Form Recognition
- Electronic safe to approach system (Mi Thumbs Up / Digital Thumbs Up (DTU)). An electronic safe-to-approach system is sited on the outside of a machine and provides a visual and audible indicator. Once the machine has been isolated, the operator activates it, indicating that it is safe to approach the operator and machine via the green entry zone once the operator has activated the green entry light. Refer to Appendix 8.

Desirable - emissions

- Engine emissions are compliant with EU Stage V.

Desirable – operator / supervisor

- Operator to hold a current driving licence
- Operator to be competency assessed in dealing with spills and environmental protection.

Hazards / risks

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

Back to contents page

Instability:

- Due to operating on inadequately prepared piling platforms
- Of mast or rig due to failure to follow the manufacturer's guidelines on mast inclination
- Underground services.

Other:

- A rope failure causing a runaway flot sledge on the mast
- Air hose failure
- Concrete flexible hose burst at height
- Concrete or stone falling from height
- Excessive noise and vibration from repeated driving with the flot
- Exclusion zones being ignored by other operatives on site
- Installing stone columns adjacent to the site hoarding or third parties
- Lorry Loader instability during flot changes
- Multiple rigs and cranes working in proximity
- Rig Attendant not monitoring the exclusion zone effectively and keeping others clear
- Rig instability in strong winds
- Spray of hydraulic oil due to hose burst
- Zone testing engineers being trapped or crushed due to working near the piling rig.

Back to contents page

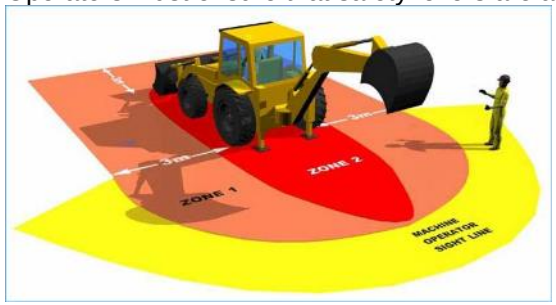
Appendix 1: Plant Safe Zones

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

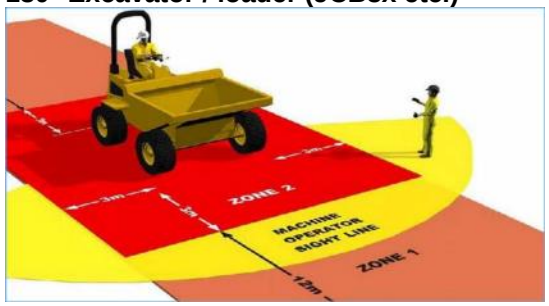
Zone 1	Always signal the plant operator and receive a positive response before entering Zone 1.
Zone 2	Keep out at all times.

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

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

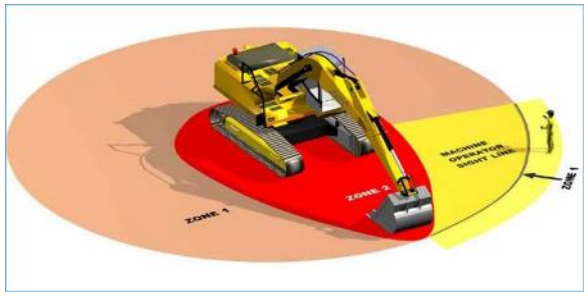


180° Excavator / loader (JCB3x etc.)

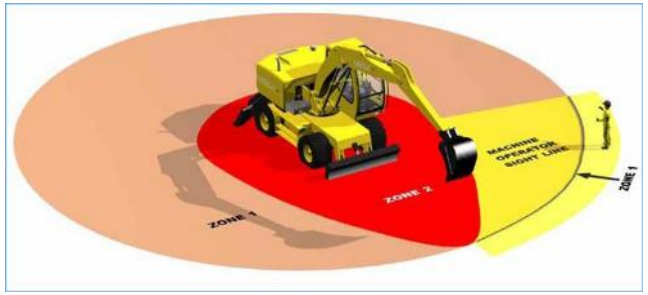


Plant and Equipment Minimum Standards

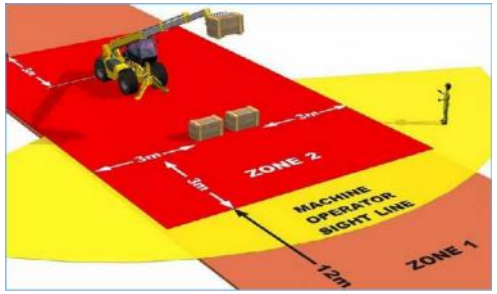
Back to contents page



360° tracked excavator



360° wheeled excavator



Forward tipping dumper Telehandler

Back to contents page

Appendix 2: Material handling attachments for MEWPs

A lightweight manufacturer approved material handling attachment designed to work with a wide range of materials. It 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.

Plant and Equipment Minimum Standards

Back to contents page

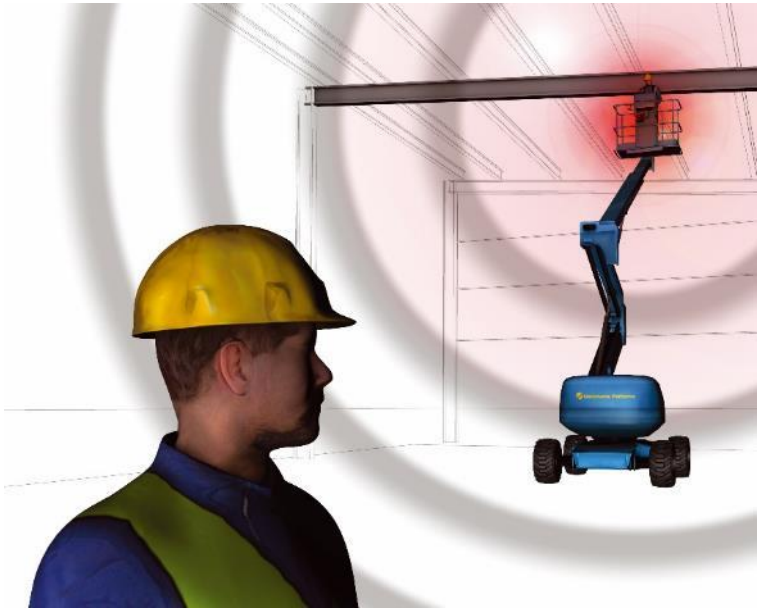
A manufacturer approved material handling attachment designed to carry a wide range of materials up to 600kg in weight, which is safely stored on most large double-decked diesel scissor lifts, with no weight on the MEWP handrails.

A lightweight manufacturer approved material handling attachment allows the safe storage of materials up to 90kg in weight. It is designed to work with many materials on boom type MEWPs.

Back to contents page

Appendix 3: Secondary guarding device

The secondary guarding device 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 colleagues' attention on the ground to enact the emergency lowering procedure without delay. Must be a manufacturer approved solution.



Plant and Equipment Minimum Standards

Back to contents page

Intelligent secondary guarding is an advancement in secondary guarding solutions. It provides double protection for operators. It is designed to prevent entrapment, raise operator alertness, and improve safety by detecting potential trap and crush hazards before they occur and automatically stop the platform.
Must be a manufacturer approved solution.

Plant and Equipment Minimum Standards

Back to contents page

Much like Intelligent secondary guarding for booms, there are manufacturer approved system for Scissors. These approved systems feature a sensitive edge technology, protecting the operator should an entrapment occur, stopping the machine, and sounding a ground-level alarm and emergency flashing light. Furthermore, the system features sensors detecting hazards before an entrapment can occur. Notably, the system has been adapted to work specifically for the movement of scissors, not just in their vertical application but also in horizontal drive travel.

The manufacturer approved secondary guarding on boom and scissor type MEWPs will allow the operator to recycle the controls and continue to work close to the hazard. However, a local alarm (only heard in the basket) and a small red flashing light will remain active to remind the operator that they are still working in a high-risk scenario.

Appendix 4: Effective Fleet Management

Back to contents page

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.

Back to contents page

Appendix 5: A listing of competence cards / evidence of demonstrable training

(By PET STD 01 plant machine / equipment listing number order)

Plant Category	Competency cards / evidence of demonstrable training, as applicable
Plant Generator <10kVA	Evidence of demonstrable training and experience in operation of diesel generators (<10kVA)
Diesel Generator <20kVA	Evidence of demonstrable training and experience in operation of diesel generators (<20kVA)
Diesel Generator >20kVA	Evidence of demonstrable training and experience in operation of diesel generators (>20kVA)
Towable equipment	Must be suitably trained in the use of towing equipment and for the host vehicle / item of plant
Site Tow Bowser	Evidence of briefing in operation and safe use of the equipment in accordance with the manufacturer's instructions / recommendations
Highway Tow Bowser	Evidence of briefing in operation and safe use of the equipment in accordance with the manufacturer's instructions / recommendations
Agricultural Tractor Trailer	CPCS - A50 Loader/Securer - STGO (Blue Competence Card) CPCS - A49B Loader/Securer (non STGO) LGV (Blue Competence Card) NPORS (CSCS affiliated) - Trained Operator Plant Loader and Securer Restricted to Wheeled Only NPORS (CSCS affiliated) - Trained Operator Plant Loader / Securer
180° Excavator / Loader (JCB3CX etc.)	CPCS – A10 (<5t); A12 (>5t) NPORS (CSCS affiliated) – N201 (180° Excavator); N100 (Excavator as a crane)
Mini Excavator	CPCS – A58A (<10t); A58C (Lifting with excavator) NPORS (CSCS affiliated) – N016 (Micro Excavator 360º up to 1t); N202 (Excavator 360º); N100 (Excavator as a crane)
Tracked 360° Excavator	CPCS – A58A (<10t); A59A (>10t) CPCS – Lifting with excavator A58c (<10t) or A59c (>10t) NPORS (CSCS affiliated) – N202 (Excavator 360°); N100 (Excavator as a crane)
Wheeled 360° Excavator	CPCS – A58B (<10t); A59B (>10t) CPCS – Lifting with excavator A58c (<10t) or A59c (>10t) NPORS (CSCS affiliated) – N202 (Excavator 360°); N100 (Excavator as a crane)
Dual View Dumper 6t and above / Forward and Side Tipping Dumper 3t	CPCS – A09 > endorsements A – Forward tipping wheeled; B – Forward tipping tracked NPORS (CSCS affiliated) – N204 (Forward tipping dumper)
Articulated Dump Truck	CPCS – A56 – articulated chassis – A – Up to 15t; B – All sizes (senior) NPORS (CSCS affiliated) – N205 – Rear dump truck
Tracked Dumper (3t to 15t)	CPCS – A09 – Forward tipping tracked dumper NPORS (CSCS affiliated) – N205 (Rear Tipping Dumper)

Plant and Equipment Minimum Standards

Plant Category	Competency cards / evidence of demonstrable training, as applicable
Crawler Crane	CPCS – A02 (Crawler crane over 10t); A66D (Compact Crane 360° Pick and carry) NPORS (CSCS affiliated) – N103 (Crawler crane)
Mobile Crane	CPCS – A60 > endorsements A – blocked duty only; B – pick and carry duties only; C – all duties NPORS (CSCS affiliated) – N101 (Mobile crane)
Telehandler	CPCS – A17 (Endorsements A-E) that includes – A – Industrial Telescopic; B – Up to 9m; C – All sizes, ex. 360° slew; D – Superseded by A77; E – Suspended load (non-rough terrain) CPCS – A77 – Telescopic handler 360° slew NPORS (CSCS affiliated) – N010 (Telescopic handler); N138 (Telescopic handler suspended loads)
Rotary Telehandler	CPCS – A17 Cat D including 360° slew (forks only) CPCS – A17 Cat E suspended loads (if using with hooks or winches) CPCS – A77 (new licence which includes all the above) NPORS (CSCS affiliated) – N010 (Telescopic Handler) IPAF – 1b (if using integrated man platform 2-4m extendable)
Lorry Loader Crane	ALLMI (Lorry loader operator certification) CPCS – A36 > endorsements A – hook; B – clamshell C – hydraulic clamp NPORS (CSCS affiliated) – N107 (Lorry loader)
Tower Crane	CPCS A04 with appropriate endorsements CPCS A04 has the following additional endorsements • A – Trolley Jib – Cab Controlled • B – Luffing Jib – Cab Controlled • C – Trolley Jib – Remote Controlled NPORS (CSCS affiliated) - N102 – Tower Crane NPORS (CSCS affiliated) - N115 – Remote Controlled Tower Crane NPORS (CSCS affiliated) - N115 and CPCS A04 with endorsement C are intended for tower cranes rigged with a remote-control device and pedestrian / self-erecting tower cranes.
Mobile Elevating Work Platform (MEWP)	CPCS – A25 – scissor; A26 – boom; A27 – mast climber, or IPAF – (1a – static vertical; 1b – static boom; 3a – mobile vertical; 3b – mobile boom) NPORS (CSCS affiliated) – N108 (Boom); N109 (Scissor lift)
MEWP – Spider Lift only	IPAF certification (1b – static boom)
Road Sweeper / Collector	CSCS – Road Sweeper and Gully sucker Operator, NVQ L2 NPORS (CSCS affiliated) – N217 (Road Sweeper)
Compressor / air systems	Evidence of demonstrable training and experience in operation of compressor / air system

Plant and Equipment Minimum Standards

Plant Category	Competency cards / evidence of demonstrable training, as applicable
Ride on Compaction Roller	CPCS – A31 – Ride on roller NPORS (CSCS affiliated) – N214 – Road roller
Tracked Dozer	CPCS – A34 – Crawler tractor / dozer NPORS (CSCS affiliated) – N215 – Dozer
Wheeled Loading Shovel	CPCS – A21 – Wheeled loading shovel – together with appropriate endorsement NPORS (CSCS affiliated) – N209 – Loading shovel
Agricultural Tractor and Tractor Winches	CPCS – A33 – Agricultural tractor NPORS (CSCS affiliated) – N601 – Agricultural Tractor
Concrete Mixer Truck	Evidence of demonstrable training and experience in the operation of a mixer truck
Vacuum / Suction Excavator	CPCS – A78 – Vacuum excavator (Driver / operator) • A78E: Non-KVV, Semi-powered arm • A78F: Non-KGV, Fully-powered arm (Senior) CPCS – A78 – Vacuum excavator (Second operator) • A78G: LGV semi-powered arm, Second operator (Non-LGV driver) • A78H: LGV Fully-powered arm, Second operator (Non-LGV driver) CSCS / EUSR skill card (TT-UK Suction Excavation category) or equivalent NPORS (CSCS affiliated) – N021 – Suction excavator
Concrete Pump	CPCS – A06 (Truck mounted boom – LGV required); A44 (Concrete pump trailer mounted) NPORS (CSCS affiliated) – N211 (Concrete pump mobile)
Concrete Extrusion Machine	Evidence of: (1) Appropriate training for extrusion machines; (2) Familiarisation training for the type of machine to be operated; (3) Pressure washer training
Mobile Crushing Plant	CPCS – A42 – for all persons operating the crusher NPORS (CSCS affiliated) – N207 – Crusher
Volumetric Mixer	Evidence of appropriate training and competence assessment for the machine (either by the manufacturer or in-house by an operator previously trained by the manufacturer)
Side-by-side All-Terrain Vehicle (ATV)	All operators for ATVs must complete full product familiarisation training and/or show proof that this has been completed within the last 24 months before operating the ATVs on site NPORS (CSCS affiliated) – N608 (ATV)

Plant and Equipment Minimum Standards

Plant Category	Competency cards / evidence of demonstrable training, as applicable
On-Track Plant	Competent for the plant to be operated with a Sentinel smartcard with competence in date for the type of machine and a company provided Authority to Work Card endorsed with the specific model of Plant they are to operate Hold level 1 medical requirements as detailed in NR/L2/OHS/00124
Road / Rail Vehicle – 360º Excavator / Excavator Cranes tracked or wheeled	Sentinel smart card endorsed with OTP core, Machine Operator – Excavator or excavator/crane A valid company-issued Authority to Work card endorsed with the specific excavator to operate and the specific lifting accessory or attachment to use.
Road / Rail Vehicle – Self-propelled MEWP (Type 3B)	Sentinel smart card endorsed with OTP core, Machine Operator – Self-propelled MEWP Valid company issued Authority to Work card endorsed with the specific MEWP to operate
LDP Piling Rig	CPCS – A47 – Piling Rig [Bored below 20t] CPCS – A48 – Piling Rig [Bored above 20t] NPORS (CSCS affiliated) – N221 (Piling Rig)
Mini Rotary Piling Rig	CPCS – A47 – Piling Rig [Bored below 20t] CPCS – A48 – Piling Rig [Bored above 20t] NPORS (CSCS affiliated) – N221 (Piling Rig)
CFA Piling Rig	CPCS – A47 – Piling Rig [Bored below 20t] CPCS – A48 – Piling Rig [Bored above 20t] NPORS (CSCS affiliated) – N221 (Piling Rig)
Driven Piling Rig	CPCS – A45 – Piling Rig [Driven below 20t] CPCS – A46 – Piling Rig [Driven above 20t] NPORS (CSCS affiliated) – N221 (Piling Rig)
Piling Rigs Vibro	CPCS – A47 – Piling Rig [Bored below 20t] CPCS – A48 – Piling Rig [Bored above 20t] NPORS (CSCS affiliated) – N221 (Piling Rig)

Appendix 6: SHEQ Alert lorry loaders

Back to contents page

Q SAFETY ALERT

MORGAN SINDALL INFRASTRUCTURE

Swing-up stabiliser systems fitted to lorry loading cranes

There have been three fatal accidents in the UK since 2019 involving Lorry Mounted Loader Cranes ('lorry loaders') fitted with swing-up stabiliser legs. In all cases the operators were using fixed lorry mounted controls at the base of the crane and were crushed as the stabiliser legs were retracted horizontally under power. Manufacturers are in the process of retrofitting safeguards to eliminate the risk. Meanwhile we are required to reduce the risk by the presence of a marshal during operations.

Action required

1. To eliminate the risk of entrapment where fixed controls are mounted at the base of the crane, lorry mounted cranes fitted with powered swing-up stabiliser legs must be **retro-fitted with a manufacturer-approved interlocking system** that prevents retraction unless the leg is in a vertical position. This modification is also required for any cranes with remote control options where it is possible for the operator to stand in an area where there is a risk of entrapment. We expect suppliers to engage with the manufacturer / importer of the lorry loader to retrospectively apply manufacturer approved measures.

2. Until modifications have been undertaken, Morgan Sindall Infrastructure (and many other Tier 1 Contractors) will only permit operation of un-modified vehicles with the addition of a dedicated second competent person present to supervise the activity—the marshal. This can be provided by the supplier or fulfilled by an existing plant & vehicle marshal on site, trained in this task.

3. With immediate effect supply chain partners must ensure that all operators of this equipment have been fully briefed and trained on the risks of operation and that all such lifting operations are properly supervised. Operators of such equipment must also carry out a point of work risk assessment. ALLM Swing Up Stabilisers Safety Alert v2 July 2022.

When arranging deliveries, please discuss these requirements with your supplier before dispatch.

Additional Information: ALLM, the lorry loader industry body, have issued Guidance Note 033 ALLM Guidance Note GN033 Swing Up Stabiliser Safety. Morgan Sindall Infrastructure will only accept vehicles that are configured as depicted in Scenarios 3 (but must have a dedicated second competent person to supervise), 4, 5, 6 and 7 only.

The Tier 1 community are working with ALLM to ensure communication and collaboration with the industry and have agreed a simple visual indicator (QR Code) applied to lorries with suitable retrofitted interlocking systems.

In Summary

The following controls must be established where retrofitted interlocking systems are yet to be fitted:

- Check that the operator is aware of the risk of entrapment
- Ensure a marshal is tasked to observe the retraction process to safeguard the operator
- Those asked to marshal are given the ALLM briefing on the requirements of the role

This advice should be used, where the above is applicable, and the information discussed with your team highlighting the following points:

Project Director authorisation in the first instance will be required to allow lorry loaders to operate on their projects, without the manufacturers retro-fitted controls, with the second competent person appointed. An Operations Director, Contracts Manager suitably appointed can act in this capacity, and the SHEQ Advisor/Manager must be consulted. Our projects must ensure SIS PRM 08 Delivery Lifting Plan and Lorry Loader Checking Form are a point of work risk assessment is completed prior to completing this operation.

SHEQ Alert date: 10/2022 Display until: 01/12/2022

Distribution: Morgan Sindall x Supply Chain x Plant Hire Desk x Morgan Sindall Group x

Communication: Toolbox talks/briefings x Noticeboards x SHEQ update x

Everyone has the right to be 100% Safe

Click here to view the SHEQ Alert on Connect

Appendix 7: SHEQ Bulletin MEWPs

Back to contents page

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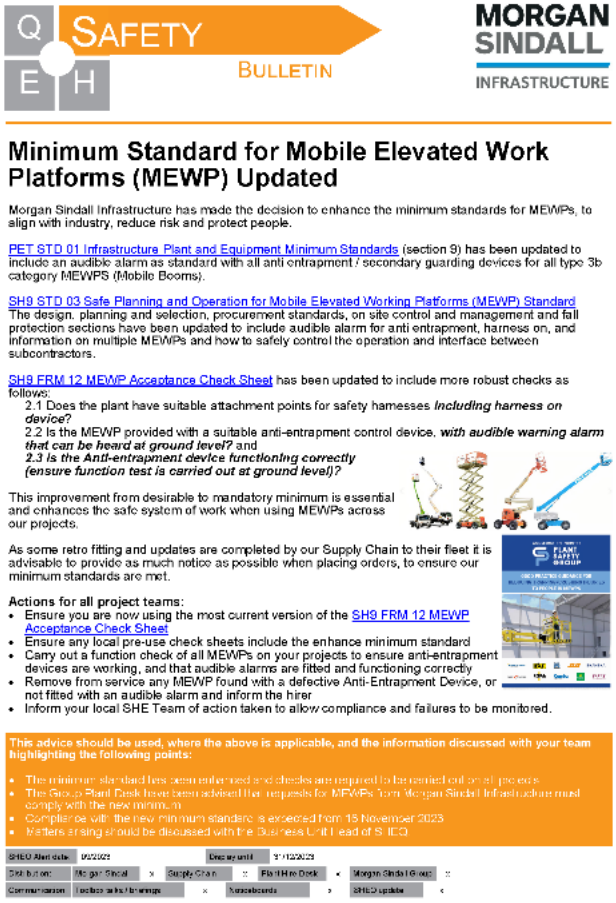


Q SAFETY E H BULLETIN

MORGAN SINDALL INFRASTRUCTURE

Minimum Standard for Mobile Elevated Work Platforms (MEWP) Updated

Morgan Sindall Infrastructure has made the decision to enhance the minimum standards for MEWPs, to align with industry, reduce risk and protect people.

PET STD 01 Infrastructure Plant and Equipment Minimum Standards (section 9) has been updated to include an audible alarm as standard with all anti entrapment / secondary guarding devices for all type 3b category MEWPS (Mobile Booms).

SH9 STD 03 Safe Planning and Operation for Mobile Elevated Working Platforms (MEWP) Standard
The design, planning and selection, procurement standards, on site control and management and fall protection sections have been updated to include audible alarm for anti entrapment, harness on, and information on multiple MEWPs and how to safely control the operation and interface between subcontractors.

SH9 FRM 12 MEWP Acceptance Check Sheet has been updated to include more robust checks as follows:
2.1 Does the plant have suitable attachment points for safety harnesses ***including harness on device***?
2.2 Is the MEWP provided with a suitable anti-entrapment control device, ***with audible warning alarm that can be heard at ground level?*** and
2.3 Is the Anti-entrapment device functioning correctly (ensure function test is carried out at ground level)?

This improvement from desirable to mandatory minimum is essential and enhances the safe system of work when using MEWPs across our projects.

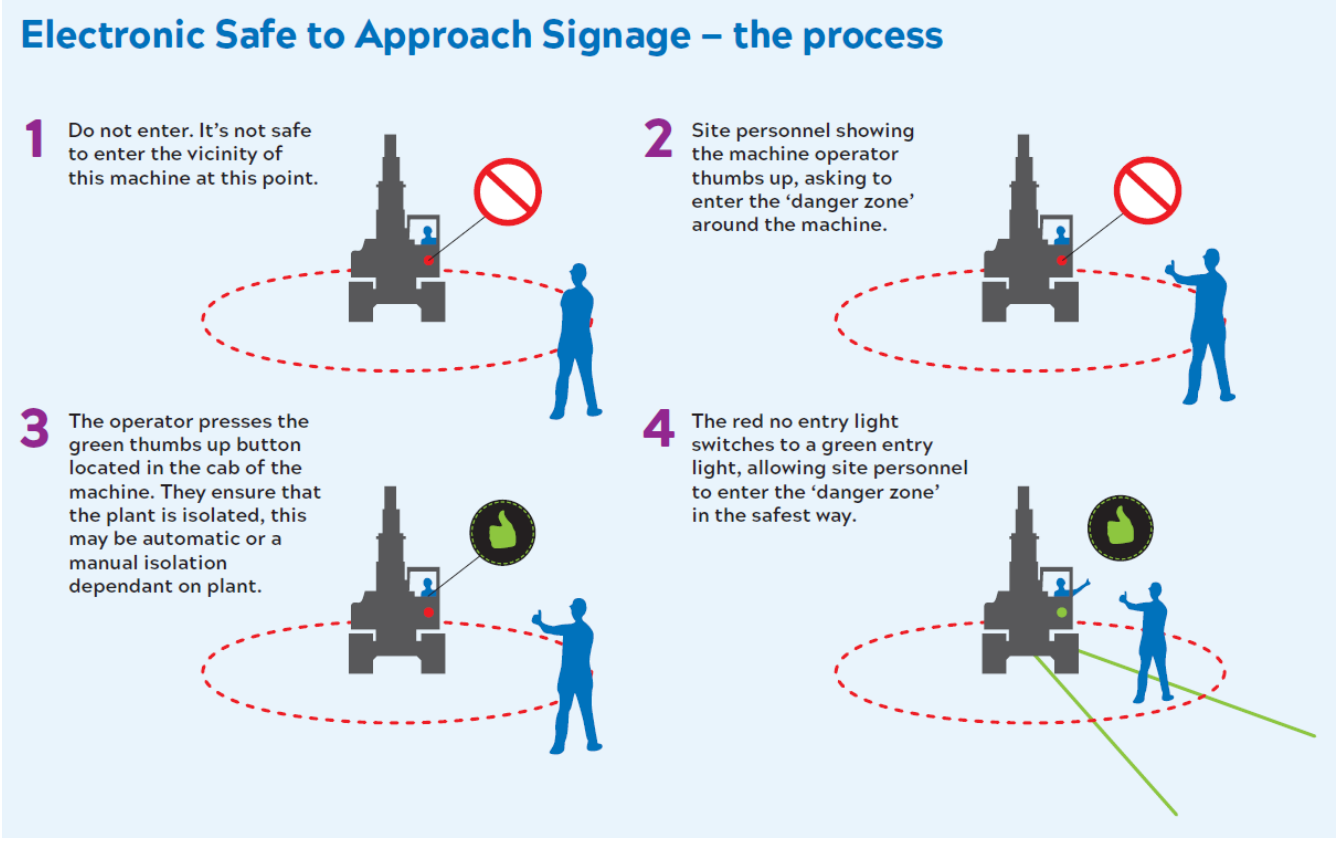
As some retro fitting and updates are completed by our Supply Chain to their fleet it is advisable to provide as much notice as possible when placing orders, to ensure our minimum standards are met.

Actions for all project teams:
- Ensure you are now using the most current version of the SH9 FRM 12 MEWP Acceptance Check Sheet
- Ensure any local pre-use check sheets include the enhance minimum standard
- Carry out a function check of all MEWPs on your projects to ensure anti-entrapment devices are working, and that audible alarms are fitted and functioning correctly
- Remove from service any MEWP found with a defective Anti-Entrapment Device, or not fitted with an audible alarm and inform the hirer
- Inform your local SHE Team of action taken to allow compliance and failures to be monitored.

This advice should be used, where the above is applicable, and the information discussed with your team highlighting the following points:
- The minimum standard has been enhanced and checks are required to be carried out on all projects
- The Group Plant Desk have been advised that requests for MEWPs from Morgan Sindall Infrastructure must comply with the new minimum
- Compliance with the new minimum standard is expected from 15 November 2023
- Matters arising should be discussed with the Business Unit Head of SHEQ

Back to contents page

Appendix 8: Electronic safe-to-approach indicator



Appendix 9: Carrying Waste on Public Highways with a Suction Excavator

Back to contents page

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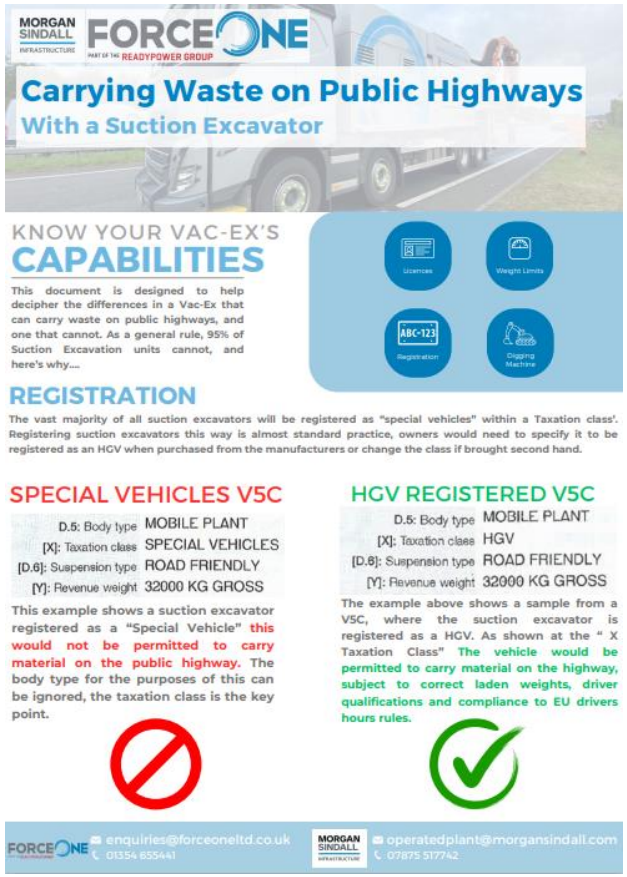

Appendix 10: SHEQ Bulletin – Update Floor saw – High Potential Incident (HPI)

Back to contents page

Click here to view the SHEQ Bulletin on Connect

Q SAFETY BULLETIN

MORGAN SINDALL INFRASTRUCTURE

Update - Floor saw High Potential Incident (HPI)

A High Potential Incident (HPI) occurred on the Old Street Station project. When using a Tyrolit FSD1274 floor saw to produce cuts in the existing asphalt and concrete the 900mm diamond blade became detached and separated from the saw. No injuries or damage resulted.

After completing the first initial cut, the operative backed the floor saw and deepened the blade ready for the second pass, then started to drive the floor saw forward when the bolt connecting the blade to the saw snapped.

The latch plate and blade became detached from the saw and came to rest within the guard.
The blade was deep enough in the asphalt and concrete that it remained within the cut. The machine was stopped immediately, and saw cutting was ceased pending an investigation.

On the left are images of the:
Broken saw blade bolt which sheared at the base of the thread, and
floor saw in use (taken immediately after the incident).

The investigation determined that the cause of the incident was fatigue of the (single) blade bolt and accumulative damage which resulted in it shearing / failing.

A supplier of a different model of floor saw, Husqvarna, issued a safety bulletin in 2021 following another serious incident where a blade bolt had come loose / undone resulting in the blade leaving the saw and guard. The advice thereafter for their equipment is that a multi pin flange latch plate must be used as an additional safety feature, shown in the photograph.

It has been recognised that in certain cases smaller floor saws i.e. those 450mm diameter and below, may not have multi pin connections.

Updated action endorsed and instructed by Safety and Health Executive Leadership Team (SHELT):

- To prioritise elimination of the reliance on a single bolt and select floor saws of the type fitted with a multi pin flange plate
- The multi pin flange plate must be approved by the manufacturer for the type / size of floor saw
- Should a deviation from this hierarchy be necessary then a specific risk assessment is required and for that deviation / alternative to be approved by the project director / leader and head of SHEQ before use
- All projects are required to review equipment currently on hire / in use and ensure the above requirements are met
- Procurement teams and hire desks are to acknowledge receipt of this instruction for action.

This instruction and the information must be cascaded and discussed with Morgan Sindall Infrastructure teams and supply chain.

SHEQ Alert date:	10/2022	Display until:	30/11/2022				
Distribution:	Morgan Sindall	✓	Supply Chain	✓	Plant Hire Desk	✓	Morgan Sindall Group
Communication:	Toolbox talks / briefings	✓	Noticeboards	✓	SHEQ update	✓	

Everyone has the right to be 100% Safe

Appendix 11: Plant and Equipment Minimum Standards – Poster

Back to contents page

This document is being updated please contact Magnor Plant (Magnorhire@morgansindall.com) if you require assistance.