



**SUPPLY CHAIN SAFETY  
LEADERSHIP GROUP**

**Highways Safety Hub  
Raising the Bar 1  
Plant and Equipment**

Issued November 2013, Revised November 2021

## General minimum requirements (Page 1 of 2)

### Introduction

Information (text) contained in this “General Minimum Requirements” section (2 pages) is relevant to the safe management, operation and use of all plant and equipment – as applicable.

This information has been removed from text of all items, numbers 1 to 33 inclusive, included in this Raising the Bar, to:

- Streamline the document
- Provide a summary listing of “common” elements relevant to all plant and equipment – as required

### General

- All plant and equipment to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter
- Pre-use inspection signed off

### Legal

- Compliant with current UK legislation
- Compliant with European Commission (EC) Machinery Directive 2006/42/EC, or 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 [RAL 1026 (luminous yellow) or RAL 6038 (luminous green)]
- 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 each side with inflation pressure
- Wheel Nut indicators on all wheel nuts unless proved impractical
- If used adjacent live lanes control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic

### Traffic Signs Manual Chapter 8, Part 2 (Chapter 8)

If plant included in this RtB1 document, is driven, or used on the public highway, requirements of Chapter 8 should be followed, including.

- Roof mounted beacons (Chapter 8, paragraph O5.3) –
  - Roof-mounted flashing amber light bar (comprising at least 2 independent light sources) or two independent roof-mounted flashing amber warning beacons, visible through 360°, must be fitted and operational, and be used
  - 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
- Vehicle conspicuity – All vehicles must be fitted with hi-visibility markings (in accordance with Chapter 8, paragraph O5.2)
- The “HIGHWAY MAINTENANCE” sign to diagram 7404, must be externally mounted on rear of vehicle, in accordance with Chapter 8, paragraph O5.5.2 and O5.5.3. (Chapter paragraph O5.2.8 also refers)

### Operator / Driver (excluding non-working delivery vehicles)

- Attended full induction prior to starting work
- To have passed a drug and alcohol test and subject to ongoing medical screening/surveillance (RtB 12 “Occupational health”)

## General minimum requirements (Page 2 of 2)

### Operator / Driver (excluding non-working delivery vehicles)

continued...

- Competency assessment prior to 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 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 manufacturer's instructions / recommendations
- 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 facing the machine using 3 points of contact
- Operator to stop work if the event of unauthorised personnel entering working area / zone
- Report all unsafe conditions
- Where vehicle or mobile plant utilised on site has to 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 - none loose fitting PPE 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 cab

- Full site-defined PPE

### Training and Competency Requirements

- A listing of competence cards / schemes is included in Appendix 1 (at the end of this RtB document) for info / ref.
- Competence cards / schemes to be accepted by Principal Contractors in accordance with their own standards

### Hazards / Risks

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

- Access into cab/refuelling and maintenance
- Clothes can get snagged on controls prior to release of servo isolator/safety handle
- Danger of crushing in slew zone
- Effect of weather 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
- Transportation including loading/unloading

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

## 29. CFA Piling Rig



### General Minimum Requirements (GMR) Section

- The GMR Section (above) contains information common to all items of plant and equipment covered by this RtB guidance, as applicable, and text has been removed from the individual plant item pages to streamline the document
- Content of the GMR Section, as applicable, must be followed to promote and ensure safe operation and use, in addition to details contained below for this plant item

### 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
- Fire extinguisher in cab
- 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
- Roll over protective structure (ROPS) and falling object protective structure (FOPS) cab structure
- Aircraft warning lights (if working within 6km of airports or aerodromes)
- Cab steps and handles painted high visibility yellow ensuring 3 points of contact is achievable
- Locking doors with key
- Hand rails 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 machines 'Dead Man's Handle'
- Rig instrumentation shall 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 flying up the auger string
- An external 'Emergency Stop' must be fitted
- Auger guarding shall be fitted to the mast ensuring that no one comes in contact with the rotating auger
- Blow out adaptors shall have two air exhaust valves fitted and a pressure gauge to clearly identify the pressure within the pumping lines
- Isolation switch with key
- Protective mesh/guard must be installed to the window on the jib side of the cab if window is opening type
- Rubber concrete pipes fitted at height on the rig shall have whip checks fitted to all joints
- Shall have a mechanical auger cleaner fitted

- The auger cleaner must be fitted with a secondary restraint to prevent components falling from it
- The concrete Loop hose over its entire length shall be doubled bagged
- Not to be used beneath or adjacent to overhead power lines or obstructions

### Minimum Requirements – Lifting

- Current 12 month LOLER thorough examination certificate for lifting equipment
- Current 6 month LOLER thorough examination certification for all lifting accessories and attachments
- All D/Bow shackles used above 2 metres must be the Bolt Anchor Type (i.e., bolt, nut, and pin)
- All lifting accessories to be marked with safe working load (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
- Safe working load (SWL) to be clearly marked

### Minimum Requirements - Operator

- Ensure machine is operated in accordance with manufacturer's instructions and in accordance with their training
- Shall be trained in lifting operations if using the auxiliary winch
- Shall be trained in the operation of the auxiliary winch in association of 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 immediate work area
- The auxiliary line must be fully lowered to ground to prevent the wire rope or hook assembly 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
- Mobile elevating work platform 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

### Desirable - Emissions

- Engine emissions compliant to 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 machine:

Hazards/risks included in the "General Minimum Requirements" section, plus:-

- Instability: -

- By removal of obstructions or bores have not been 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
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- Being struck by bore spoil while spinning off pile arisings
  - Being struck by items of plant falling from 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 manufacturers guidelines
  - Installing piles adjacent to the site hoarding or 3rd parties
  - Operatives falling into bores that have not been 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 & 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

**Appendix 1 – A listing of competence cards / evidence of training, by RtB 1 PI number order**

<b>Plant Category</b>	<b>Competency cards / Driver CPC qualification requirements, as applicable</b>
1 Excavator Backhoe	CPCS A10 (<5 tonnes); A12 (>5 tonnes) NPORS N201 (180° Excavator); N100 (Excavator as a crane)
2 Forward and Side Tipping Dumper	CPCS A09 > endorsements A - Forward tipping wheeled ; B – Forward tipping tracked NPORS N139 (Forward tipping mini dumper up to 1 Tonne); N204 (Forward tipping dumper)
3 Mini Excavator (<10 Tonne)	CPCS A58A (<10 tonnes); A58C (Lifting with excavator) NPORS N016 (Micro Excavator 360° up to 1 tonne); N202 (Excavator 360°); N100 (Excavator as a crane) N124 (Load and Secure Excavator up to 5T)
4 Tracked 360° Excavator	CPCS A58A (<10 tonnes); A59A (>10 tonnes) CPCS Lifting with excavator A58C (<10 tonnes); A59C (>10 tonnes) NPORS N202 (Excavator 360°); N100 (Excavator as a crane)
5 Wheeled 360° Excavator	CPCS A58B (<10 tonnes); A59B (>10 tonnes) CPCS Lifting with excavator A58C (<10 tonnes); A59C (>10 tonnes) NPORS N202 (Excavator 360°); N100 (Excavator as a crane)
6 Crawler Crane	CPCS A02 (Crawler crane over 10 tonnes); A66D (Compact Crane 360° Pick and carry) NPORS N103 (Crawler crane)
7 Lorry Mounted Crane	ALLMI (Lorry loader operator certification) CPCS A36 > endorsements A – hook; B – clamshell C – hydraulic clamp NPORS N107 (Lorry loader)
8 Mobile Elevating Work Platform	CPCS A25 – Scissor; A26 – Boom; A27 – Mast climber IPAF: 1a – static vertical; 1b – static boom; 3a – mobile vertical; 3b – mobile boom NPORS N108 (Boom); N109 (Scissor lift)
9 Mixer Truck	<ul style="list-style-type: none"> <li>Evidence of demonstrable training and experience in operation of mixer truck</li> </ul>
10 Telehandler	CPCS A17 (Endorsements A-E) that includes - A – Industrial Telescopic; B – Up to 9 metres; C – All sizes ex. 360° slew; D – Superseded by A77; E – Suspended load (non-rough terrain) CPCS A77 - Telescopic handler 360° slew NPORS N010 (Telescopic handler); N011 (Industrial telescopic handler); N138 (Telescopic handler suspended loads)

Plant Category	Competency cards / Driver CPC qualification requirements, as applicable
11 Compressor /Air Systems	<ul style="list-style-type: none"> <li>Evidence of demonstrable training and experience in operation of compressor/air system</li> </ul>
12 Road Sweeper / Collector	CSCS - Road Sweeper and Gully sucker Operator, NVQ L2 NPORS N217 (Road Sweeper)
13 Tipper – Rigid or Articulated	<ul style="list-style-type: none"> <li>Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification</li> </ul>
14 Concrete Pump	CPCS A06 (Truck mounted boom – LGV required); A44 (Concrete pump trailer mounted) NPORS N211 (Concrete pump mobile)
15 Mobile Crane	CPCS A60 > endorsements A – blocked duty only; B – pick and carry duties only; C – all duties NPORS N101 (Mobile crane)
16 Concrete Extrusion Machine	<ul style="list-style-type: none"> <li>Evidence of: (1) Appropriate training for extrusion machines; (2) Familiarisation training for the type of machine to operated; (3) Pressure washer training</li> </ul>
17 Mobile Crushing Plant	CPCS A42 - for all persons operating the crusher NPORS N207 - Crusher
18 Ride on Compaction Roller	CPCS A31 - Ride on roller NPORS N214 - Road roller
19 Tracked Dozer	CPCS A34 - Crawler tractor / dozer NPORS N215 - Dozer
20 Wheeled Loading Shovel	CPCS A21 - Wheeled loading shovel - together with appropriate endorsement NPORS N209 - Loading shovel
21 Volumetric Mixer	<ul style="list-style-type: none"> <li>Evidence of appropriate training and competence assessment for machine (either by the manufacturer or in-house by an operator previously trained by the manufacturer)</li> </ul>
22 Suction Excavator (Vacuum Excavator)	<p>CPCS A78 – Vacuum excavator - (Endorsements A-H) that includes:</p> <ul style="list-style-type: none"> <li>A: Trailer - Manual arm; B: Trailer - Semi powered arm; C: Non-KGV - Manual arm; D: Non-KGV - Semi powered arm; E: Non-KGV - Semi powered arm; F: Non-KGV - Fully powered arm (Senior); G: LGV semi-powered arm - Second Operator (Non-LGV driver); H: LGV fully powered arm - Second Operator (Non-LGV driver)</li> </ul> <p>CSCS / EUSR skill card (TT-UK Suction Excavation category) or equivalent NPORS N021 - Suction excavator NRSWA operative competency</p>



Plant Category	Competency cards / Driver CPC qualification requirements, as applicable
23 Self Propelled Articulated or Rigid Dump truck	CPCS A56 - articulated chassis - A - Up to 15 tonnes; B - All sizes (senior) CPCS A59 - rigid chassis - A - Up to 15 tonnes; B - Up to 50 tonnes; C – All sizes wheeled (senior); D – All sizes tracked (separate) NPORS N205 - Rear dump truck
24 Agricultural Tractor	CPCS A33 – Agricultural tractor NPORS N601 - Agricultural Tractor
25 Site Towed Bowser	<ul style="list-style-type: none"> <li>Evidence of briefing in operation and safe use the equipment in accordance with manufacturer’s instructions / recommendations</li> </ul>
26 Highway Towed Bowser	<ul style="list-style-type: none"> <li>Evidence of briefing in operation and safe use the equipment in accordance with manufacturer’s instructions / recommendations</li> </ul>
27 LDP Piling Rig	CPCS A47 – Piling Rig [Bored below 20 tonnes]; A48 – Piling Rig [Bored above 20 tonnes]
28 Mini Rotary Piling Rig	CPCS A47 – Piling Rig [Bored below 20 tonnes]; A48 – Piling Rig [Bored above 20 tonnes]
29 CFA Piling Rig	CPCS A47 – Piling Rig [Bored below 20 tonnes]; A48 – Piling Rig [Bored above 20 tonnes]
30 Driven Piling Rig	CPCS A45 – Piling Rig [Driven below 20 tonnes]; A46 – Piling Rig [Driven above 20 tonnes]
31 Piling Rigs Vibro	CPCS A47 – Piling Rig [Bored below 20 tonnes]; A48 – Piling Rig [Bored above 20 tonnes]
32 Diesel Generator Above 20KVA	<ul style="list-style-type: none"> <li>Evidence of demonstrable training and experience in operation of diesel generators (&gt;20kVA)</li> </ul>
33 Diesel Generator Less than 20KVA	<ul style="list-style-type: none"> <li>Evidence of demonstrable training and experience in operation of diesel generators (&lt;20kVA)</li> </ul>