



**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.

## 22. Suction Excavator



### 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

Lorry mounted suction / vacuum excavator, 26 or 32t GVW c/w either hydraulic or counterbalanced suction arm.

### Minimum Requirements - Plant

- Current MOT plating certificate
- Current VED and operator 'O' licence displayed in the cab windscreen
- On public highway - insured, and compliant with C&U regulations (VED registered, working lights, indicators, registration plate's front & rear etc.)
- Must have whole vehicle type approval if registered after Oct '14
- Mirrors (including Class V & VI)/CCTV to satisfy 1m high at 1m distance 360° visibility criteria
- Reversing camera

- White noise reversing alarm audible outside of the cab
- All tools must be made of non-conductive material
- Appropriate warning signage including noise levels
- Emergency stops fitted front and rear
- Fall prevention and/or fall arrest arrangements where access to vehicle body required
- Fire extinguisher fitted in cab
- First aid kit and eye wash in 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
- Safe access for refuelling, maintenance and to any place where accessories stored
- Safe and clean access into cab
- Suction nozzles must be made of non-conductive material only
- If used under overhead cables or obstructions:
  - Height restrictors with indication on machine
  - Health and Safety Executive's GS6 avoidance of danger from overhead electric power lines must be followed

### 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 should 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 and effectively communicated and practised prior to works commencing

### Minimum Requirements – FORS

- Fleet Operator Recognition Scheme (FORS) compliant Bronze accreditation
- In addition, FORS silver or gold progression, to be provided to suit project risk requirements
- For further guidance, refer to – <https://www.fors-online.org.uk/cms>

### Minimum Requirements – Chapter 8

- Refer to “General Minimum Requirements” section (above) for details relating to amber colour beacons, vehicle conspicuity and highway maintenance signage requirements

### Minimum Requirements - Operator

- Competency requirements – CPCS card category A78
  - A78E: Non-KVV, Semi-powered arm
  - A78F: Non-KGV, Fully-powered arm (Senior)
- Operator must hold the correct category of driving licence for the vehicle / plant being utilised along with current Driver CPC qualification
- Operator must be suitably trained and competent in the use of this type of equipment
- All operators must be trained in Working at Heights to a recognised standard
- A safe system of work must be in place for all working at height activities, including: - hose blockage, maintenance and repairs
- 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
- A full exclusion zone must be established around the operation which must include the operating radius of the boom as a minimum
- A secondary person must be in the vicinity of the operation at all times who is fully trained to operate the machine in case of an emergency
- Competency requirements for Second operator – CPCS card cat. A78
  - A78G: LGV semi-powered arm, Second operator (Non-LGV driver)
  - A78H: LGV Fully-powered arm, Second operator (Non-LGV driver)
- Cease suction operations & turn off engine if exclusion zone is entered by others
- If fitted with a hydrostatic drive an operator must be present in the driving seat in addition to the operator controlling the machine externally
- Seat belt must be worn (when driving)
- Working hours to be legally compliant for HGV drivers (Working time regulations 1998, EU driving rules, GB domestic driver rules)

### Desirable - Plant

- CCTV/Proximity sensor system
- Compliant with CLOCS standard
- For driving activities, seat belt operation interlocked with ignition switch/warning indicator
- Independent isolation system
- Locking caps/covers to fuel and all other tanks
- Remote hydrostatic drive
- Telematics system c/w geo fencing

### Desirable - Emissions

- Engine emissions compliant to EURO 6

### 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 machine:

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

- At no time must anyone work or walk underneath the boom or vacuum nozzle, whether it is being operated or not
- Controls should be secured so that unauthorised operation is effectively prevented when the machine is not in use
- Danger of crushing by boom or manoeuvring vehicle
- Danger of crushing under un-propped body
- Disposing of waste products
- Do not operate if machine is, or appears to be damaged
- No entry into exclusion zone unless signalled by operator-
- No steel suction nozzles allowed
- Noise – hearing protection must be used as appropriate
- Non-invasive excavation techniques to be used only, as per manufacturer's instructions
- Operational exclusion zone
- Working adjacent to live traffic
- Working at height

**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 data-bbox="898 456 2085 531">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 data-bbox="898 531 2085 606">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 data-bbox="898 837 2047 912">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 data-bbox="898 912 2047 994">Evidence of demonstrable training and experience in operation of diesel generators (&lt;20kVA)</li> </ul>