Piling rig
driven above 20 tonnes – A46
Learning for CPCS

Outcomes

Through a combination of targeted training and experience, an individual with the piling rig will be able to:

Roles and responsibilities	• Describe the nature of the sector of industry and their role and responsibilities as a plant operator
Preparing for work	• Name and explain the purpose of principal components, the basic construction, controls and terminology • Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation • Undertake all pre-use checks
Travelling and manoeuvring	• Configure and ready for travel • Explain the procedures and precautions to be taken when travelling over rough, undulating ground • Manoeuvre in confined spaces
Setting up for work	• Position, configure and set for driven works • Explain actions required for hazards, underground and overhead services
Working tasks	• Accurately install displacement piles to completion • Comply with signals and instructions • Maintain safe working situations • Explain lifting requirements and limitations using a piling rig
Shutting down	• Carry out shut down and securing procedures • Explain the de-rigging, loading and unloading procedures for machine transporting

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Syllabus

Learning outcome	Training content	
• Describe the nature of the sector of industry and their role and responsibilities as a plant operator	• Industry type • Customer / client needs • Sector contribution • Role • Reporting structures • Lifelong skills • Working practices • Social responsibilities	• Communication with colleagues / management / other trades • Health and Safety at Work Act • Environmental issues • Other trades
• Name and explain the purpose of principal components, the basic construction, controls and terminology	• Differing types • Functions and applications • Power units • Hydraulic systems • Undercarriage • Counterweights • Tracks • Stability / ground pressure	• Piling equipment / attachments • Slewing arrangements • Booms / masts (leaders) • Lifting attachments • Pile types • RCIs / RLIs / safety systems • ROPS / FOPS
• Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation	• Operator's Manual • Machine decals • Health and Safety at Work Act • PPE • Duties charts • Codes of Practice • Piling specifications	• Site plans / drawings • Method statements • Lifting requirements and limitations • Risk assessments / COSHH • Inspection and reporting forms / procedures
• Undertake all pre-use checks	• Regular and non-scheduled maintenance procedures	• Sequence of pre-use checks • Defect reporting
• Configure and ready for travel	• Travel controls • Attachments / accessories • Travel position	• Site travel • Visibility • Boom / jib positioning • Road Traffic Act
• Explain the procedures and precautions to be taken when travelling over rough, undulating ground	• Travel routes • Slopes / inclines • Direction of travel • Traction / aids • Ground conditions	• Hazards • Working area • Environment protection / minimise damage

Learning outcome	Training content	
• Manoeuvre in confined spaces	• Visibility • Limitations of vision • Protection of ground / tight turns	• Environmental / noise / fumes • Height restrictions
• Position, configure and set for driven works	• Rig positioning • Required configuration / attachments • Rig (piling) controls • RCI settings • Environmental conditions • Hazards	• Counterweights • Levelling / inclines • Site markings • Stability / ground pressure • Falls of rope (optional)
• Explain actions required for hazards, underground and overhead services	• Types of typical services • Warning / identification systems	• Reporting procedures for damage to services • Minimum distances and clearances
• Accurately install displacement piles to completion	• Types of piles • Ground / soil types • Specification • Measuring for pile positioning • Maintaining vertical piles	• Maintaining stability and positioning • Environmental factors • Productive cycles of operation
• Comply with signals and instructions	• Methods and types of signals • Methods of verbal instruction • Multiple signalling	• Electronic communication / setting-up • Codes of Practice • Radio protocol
• Maintain safe working situations	• Stability • Visibility	• Hazards
• Explain lifting requirements and limitations using a piling rig	• Legislation and regulations • Load connecting	• Load securing • Lifting and load-rating charts
• Carry out shut down and securing procedures	• Shut down procedures • Security	• Parking and positioning
• Explain the de-rigging, loading and unloading procedures for machine transporting	• Compatibility • Positioning • Security • De-rigging procedures	• Types of transporter • Stowage of materials / accessories

Note: The listed training content should not be considered exhaustive and subjects may be added to reflect the individuals' working environment.

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Safety critical

Emphasis to be placed on the following topics:

Topic	Emphasis
• Manoeuvring	• Facing the direction of travel and no reversing unless authorised by nominated banksman

Duration / Ratios

To allow effective learning, these training times are recommended for this category. Candidates must be profiled to establish learning needs. Durations should be of a length to ensure the learning outcomes are met.

Experience	Accumulated hours
• Novice operators with no industry or machine experience	70
• Novice operators with industry experience but no machine experience	62
• Operators with unrelated (piling) machine experience	42
• Operators with similar (piling) machine experience	28
All candidates must have received the equivalent to 7 hours of site safety and induction training	

To allow effective learning, the listed candidate / machine / instructor ratio is the maximum recommended for this category

4 candidates : 2 machines: 1 instructor

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Resources

Practical equipment	Theory equipment
• Piling rig (driven) that meets current legislation • Suitable attachments for driven piling • Operator's manual for the machine(s) • Selection of displacement piles • Sufficient area of ground suitable for placing piles to various depths **PLUS** • Suitable PPE • Risk assessment for all areas where training is occurring	• PUWER 1998 Regulations • LOLER 1998 Regulations • HSE GS6 • BS 7121 (parts 1, 2 and 3) • Operator's Manual • Specifications for types of piling rigs **PLUS** • Suitable room for theory training purposes • Welfare and rest facilities during training.

Category

Category description and types

CPCS defines a category as an item of plant or equipment used within the construction or allied industries and worked in accordance with the manufacturer's basic design. Although this category can have varying uses within industry and used with many attachments, for CPCS training and assessment standards, the descriptions reflect basic core use.

To identify a machine within this category, a typical driven piling rig would normally have the listed features and be used within the described characteristics.

Category features	Category characteristics
• Track mounted chassis • 360 degree rotating or fixed upper structure containing the operating position; power, hydraulic, winching and electrical units • Lattice or telescopic multi-sectioned jib, or telescopic vertical mast (leader) – hydraulically adjustable • Winch operated lifting metal-stranded hoist rope mounted on pulleys • Percussive attachment suspended by hoist rope at the end of the mast or attached to the mast able to be slid up and down • Operating weight over 20 tonnes	• Able to travel in forward and reverse and change direction during travel • Can travel and operate on uneven and loose ground and slopes • Lift loads by vertically raising a hook block • Positions and places piles by percussive methods using a combination of slew and vertical motions