

Learning for CPCS

Conveying Pump - A75

Outcomes



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

Roles and responsibilities	<ul style="list-style-type: none"> Describe the nature of the sector of industry and their role and responsibilities as a plant operator
Preparing for work	<ul style="list-style-type: none"> 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, relevant regulations and legislation and other relevant sources of information Confirm the position of the machine for pumping duties Identify hazards - proximity, underground and overhead Undertake all pre-use checks
Setting up for work	<ul style="list-style-type: none"> Deploy the stabilisers to specification (where applicable) Arrange, connect and secure all material hoses and discharge tripod (where needed) Arrange and comply with communication procedures Receive, store and prepare raw mix materials Assess that the given mix is suitable for application and pump
Working tasks	<ul style="list-style-type: none"> Mix, pump and control materials accurately to the desired location Identify how blockages may occur and explain working practices for clearing blockages Maintain safe system of work at all times
Completing work	<ul style="list-style-type: none"> Explain the procedure for the disposal of excess material Complete end-of-use cleaning procedures
Shutting down	<ul style="list-style-type: none"> Carry out shut down and securing procedures

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Syllabus

Learning outcome	Training content	
<ul style="list-style-type: none"> Describe the nature of the sector of industry and their role and responsibilities as a plant operator 	<ul style="list-style-type: none"> Industry type Customer / client needs Sector contribution Reporting structures / Procedures Lifelong skills Working practices Social responsibilities 	<ul style="list-style-type: none"> Communication with colleagues / management/ other trades Health and Safety at Work Act Environmental / social responsibilities and issues Other trades
<ul style="list-style-type: none"> Name and explain the purpose of principal components, the basic construction, controls and terminology 	<ul style="list-style-type: none"> Pump types Applications Power units Chassis / trailer types Functions and controls 	<ul style="list-style-type: none"> Safety systems Attachments Remote control units Footprint
<ul style="list-style-type: none"> Conform with manufacturer's requirements as per the operator's handbook, relevant regulations and legislation and other relevant sources of information 	<ul style="list-style-type: none"> Operator's Manual Machine decals PUWER PPE 	<ul style="list-style-type: none"> Method statements Risk assessments / COSHH Inspection and reporting forms / procedures
<ul style="list-style-type: none"> Confirm the position and of the machine for pumping duties 	<ul style="list-style-type: none"> Positioning Stability Delivery hose routes Operating controls Access to pumps components Access by delivery vehicles 	<ul style="list-style-type: none"> Site markings Hazards Environmental considerations / conditions
<ul style="list-style-type: none"> Identify hazards - proximity, underground and overhead 	<ul style="list-style-type: none"> Warning / identification systems Reporting procedures for damage to services 	<ul style="list-style-type: none"> Types of typical services Minimum distances and clearances
<ul style="list-style-type: none"> Undertake all pre-use checks 	<ul style="list-style-type: none"> Sequence of pre-use checks Regular maintenance procedures 	<ul style="list-style-type: none"> Defect reporting

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Syllabus (continued)

Learning outcome	Training content	
<ul style="list-style-type: none"> Deploy the stabilisers to specification (where applicable) 	<ul style="list-style-type: none"> Types of stabilisers Support conditions 	<ul style="list-style-type: none"> Packing / load spreading Inclines / uneven ground
<ul style="list-style-type: none"> Arrange, connect and secure all material hoses and discharge tripod (where needed) 	<ul style="list-style-type: none"> Material hoses specification and condition Coupling specifications and condition Discharge tripod specifications and condition 	<ul style="list-style-type: none"> Supporting material hoses Hazards and defects
<ul style="list-style-type: none"> Arrange and comply with communication procedures 	<ul style="list-style-type: none"> Methods and types of communication Communication with marshaller Relay signalling 	<ul style="list-style-type: none"> Electronic communication / Setting-up Radio protocol
<ul style="list-style-type: none"> Receive, store and prepare raw mix materials 	<ul style="list-style-type: none"> Receiving areas Ground conditions Storage conditions 	<ul style="list-style-type: none"> Access / egress routes Hazards/obstructions
<ul style="list-style-type: none"> Assess that the given mix is suitable for application and pump 	<ul style="list-style-type: none"> Principles Different types of mixes Specifications 	<ul style="list-style-type: none"> Uses/applications Time factors Hazards
<ul style="list-style-type: none"> Mix, pump and control materials accurately to the desired location 	<ul style="list-style-type: none"> Pumping rates Signalling / communication Visibility 	<ul style="list-style-type: none"> Working efficiently Environmental considerations
<ul style="list-style-type: none"> Identify how blockages may occur and explain working practices for clearing blockages 	<ul style="list-style-type: none"> Risks Reason for blockages Components subject to blockages Alert procedure for blockages 	<ul style="list-style-type: none"> Blockage removal procedures Shut-down and re-starting methods Environmental considerations
<ul style="list-style-type: none"> Maintain safe system of work at all times 	<ul style="list-style-type: none"> Stability Material hose and discharge tripod security 	<ul style="list-style-type: none"> Communication Visibility Exclusion zones
<ul style="list-style-type: none"> Explain the procedure for the disposal of excess material 	<ul style="list-style-type: none"> Environmental considerations/waste disposal 	<ul style="list-style-type: none"> COSHH Designated wash out / disposal area

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Syllabus (*continued*)

Learning outcome	Training content	
<ul style="list-style-type: none">• Complete end-of-use cleaning procedures	<ul style="list-style-type: none">• Risk• Components• Cleaning equipment• Cleaning area	<ul style="list-style-type: none">• Methods and procedures
<ul style="list-style-type: none">• Carry out shut down and securing procedures	<ul style="list-style-type: none">• Shut down procedures• Security	<ul style="list-style-type: none">• Parking and positioning• Prepare for onward transit

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
<ul style="list-style-type: none"> Location of pump 	<ul style="list-style-type: none"> Ensuring that pump location allows all-round access and that the pump is stable and located on firm and flat ground
<ul style="list-style-type: none"> Material hoses and couplings 	<ul style="list-style-type: none"> Checking and ensuring that all safety features including whip checks are fitted, secure and clear of defects
<ul style="list-style-type: none"> Cleaning procedures / blockages 	<ul style="list-style-type: none"> The need for thorough planning of the cleaning process which ensures controlled use of cleaning balls using compressed
<ul style="list-style-type: none"> Vessel / hopper safety grill 	<ul style="list-style-type: none"> That is it is fitted and functioning correctly
<ul style="list-style-type: none"> Compressed Air (A) 	<ul style="list-style-type: none"> Working with compressed air has inherent dangers which can cause injury and death
<ul style="list-style-type: none"> Vessel release valve (A) 	<ul style="list-style-type: none"> Correct functioning and are kept clean
<ul style="list-style-type: none"> Securing lever for vessel lid (A) 	<ul style="list-style-type: none"> Ensuring that this is fitted and is functioning correctly

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
<ul style="list-style-type: none"> Novice operators with no industry or machine experience 	28
<ul style="list-style-type: none"> Novice operators with industry experience but no machine experience 	21
<ul style="list-style-type: none"> Operators with unrelated machine experience 	17
<ul style="list-style-type: none"> Operators with similar machine experience 	7
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

3 candidates : 1 machine: 1 instructor

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Resources

Practical equipment	Theory equipment
<ul style="list-style-type: none">Conveying pump (pneumatic, worm, small piston) that meets current legislationOperator's manual for the pumpStructure and works to pump material <p>PLUS</p> <ul style="list-style-type: none">Suitable PPERisk assessment for all areas where training is occurring	<ul style="list-style-type: none">PUWER 1998 RegulationsHSE GS6BS 8476BS EN 12001 : 2003 + A1 : 2009 'Conveying, spraying and placing machine for concrete and mortar' – Safety requirementsOperator's Manual <p>PLUS</p> <ul style="list-style-type: none">Suitable room for theory training purposesWelfare and rest facilities during training.

Training attributes

***To help candidates in learning the necessary skills for this category, it would be ideal if they possess one or more of the following:**

- | | |
|--|---|
| <ul style="list-style-type: none">Construction or related experienceAble to calculate basic formulaAble to record basic detailsUnderstand basic written words | <ul style="list-style-type: none">Have received site safety and induction trainingPossess good eye and hand co-ordinationHave mechanical appreciationMedically able to operator machinery (including eyesight) |
|--|---|

***Note:** Lack of any of these attributes does not prevent anyone from being trained for this category

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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, for CPCS training and assessment standards, the descriptions reflect basic core use.

To identify a machine within this category, a typical conveying pump would normally have the listed features and be used within the described characteristics. This category has three endorsements

Category features

- Pneumatic - Axled chassis containing a compressor with a separate pressure vessel for mixing and pumping
- Worm/piston – Trailer/trolley mounted chassis with mixer

Category characteristics

- Mixes raw materials which are loaded into a pressure vessel
- Pumps mixed materials through the material hoses to the desired location
- Mixes raw materials and discharged into the pumping chamber
- Pumps mixed materials through the material hoses to the desired location

Endorsement characteristics

Endorsement A - Pneumatic - All types of air conveying pumps

Endorsement B - Worm / Piston Pump (up to 50mm outlet) without mixer

Endorsement C - Worm / Piston Pump (up to 50mm outlet) with mixer