C205

COURSE OBJECTIVES

Course Objectives for C205

Dump truck: articulated chassis/Rear tipping dumper: all sizes

It is envisaged that by the end of this course of training the learner will be able to answer questions on and perform the following:

- Have a basic understanding of the industry, the dangers of working in the industry and their responsibilities as a plant operator
- Have a working knowledge of the manufacturer's handbook and other information sources including digital for the particular machine to be used
- Be able to locate and identify the major components of the machine and explain their functions
- Be able to locate and identify key controls and explain their functions
- Conduct all pre-operational checks in accordance with manufacturer and legislative requirements
- Identify and maintain PPE and appropriate safety control equipment for rear tipping dumper use
- Conduct all necessary safety checks at the work area
- Prepare the rear tipping dumper for use & operate machinery safely and efficiently
- Travel and manoeuvre the dump truck safely across varying terrain and inclines
- Manoeuvre in areas of restricted space
- Position to receive loads
- Ensure load integrity and security
- Transfer loads to different locations
- Discharge loads
- Environmental considerations
- Demonstrate knowledge and understanding of loading and unloading procedures for machine transportation
- Carry out all end of shift and shut down procedures

C205

LEARNING OUTCOMES

Have a basic understanding of the industry, the dangers of working in the industry and their responsibilities as a, plant operator	• Explain the structure of the course and the need to comply with your instructions at all times • Explain that the industry is very dangerous and has many hazards and that only safe working practices will be adopted and maintained throughout the course • Personal safety is not just the absence of physical injury, can be affected by noise, vibration and can lead to lost time, lost income, expense for the employer, fines, custodial sentences etc. Explain Health & Safety at Work etc. Act 1974, Provision and Use of Work Regulations (PUWER), Management of Health and Safety at Work Regulations (MHSW) Regulations, Construction Design and Management (CDM) Regulations, Control of Substances Hazardous to Health Regs, Control of Noise at Work Regs, Control of Vibration at Work Regulations, Road Traffic Act, HSG144, HSG47, and ROPS – FOPS, Edge Protection, Quarries Regulations, risk assessments, method statements, codes of practice and other relevant legislation and industry best practice - Restraining systems in accordance with risk assessment • Remind learners that operators have moral obligations, legal obligations and environmental obligations - Explain reporting structures, the importance of good communication on site (colleagues, management, and other workers on site) - past incidences involving relevant plant and pedestrians - working with other related roles e.g. marshallers, supervisors, other plant operatives, other occupations
Have a working knowledge of the manufacturer's handbook and other information sources including digital for the particular machine to be used	• Explain the importance of the manufacturer's handbook and explain that it will be used throughout the course • Stress that it has to be used in alliance with all relevant legislation • Explain load/tare sheets and decals etc • Explain the use of the operator's manual (for the specific machine) during the practical elements of training to identify key preparation, operational and safety aspects of the machine • types of information sources including machine control systems
Be able to locate and identify the major components of the machine and explain their functions	• Explain the different types of components • Explain the function of the components and how they all contribute to the safety and operational integrity of the machine • Explain power units, safety locking devices, fuel tank, guards, transmissions, chassis, steering, braking, carrying capacities, types of bodies, hydraulic systems, stability, ground pressure and safety systems • Purposes of Roll Over Protection Systems (ROPS) and Falling Objects Protection Systems (FOPS) and other protection systems • Types and use of traction aids

C205

LEARNING OUTCOMES

Be able to locate and identify key controls and explain their functions	• Explain the different controls and their functions, • purpose of principal components, the basic construction, controls, and terminology • Explain how correct and sympathetic use of the controls can ensure efficiency and safety of the machine and help prolong machine life by reducing wear and tear. Refer to the manufacturer's handbook, codes of practice, decals etc
Conduct all pre-operational and running checks in accordance with manufacturer and legislative requirements	• Explain the importance of pre-operational and running checks and legal implications of using a machine without having checked it • Go through the sequence of checking, use manufacturer's handbook, check sheet, decals, defect reporting procedure etc - complete all pre-start and running checks before any activity takes place, including visual checks for damage, functionality, and effectiveness • all componentry systems fully functional, including mechanical, hydraulic, pneumatic, electrical and electronic etc. • replenish fuels, fluids and lubricants, and undertake grease-based lubrication activities • manufacturers periodic checks and operator level maintenance requirements • carry out routine adjustments • safety systems functions including emergency stop • health and safety requirements when undertaking basic maintenance activities including personal protection equipment (PPE) • check condition and function of seatbelt and any other restraining equipment • check condition and function of any lighting and warning systems • use of safety items e.g. struts for hydraulic tipping and steering rams • requirements for dealing with fluid spills including prevention and clean-up methods
Identify and maintain PPE and appropriate safety control equipment for rear tipping dumper use	• Explain that PPE should include the following: Suitable safety footwear, ear defenders, face / eye protection, dust mask if appropriate, suitable gloves, overalls, hard hat, Respiratory Protective Equipment (RPE), • appropriate use of local exhaust ventilation (LEV), i.e. in confined spaces • why weather conditions, including heat and cold, can determine what PPE is worn when using specific machine and the personal effects of incorrect equipment

C205

LEARNING OUTCOMES

Conduct all necessary safety checks at the work area

Explain and demonstrate the following fully:

- Check the site and highlight or remove any hazards
- Edge protection, stop blocks and markers etc
- Overhead cables, confined areas
- Ground condition – tipping edge cracks, turning areas
- Confirm that the condition of the site is safe to work, travel routes
- Report any hazards that cannot be removed
- Set out warning signs and barriers, exclusion zones to warn members of the public and to exclude animals - safety checks that must be carried out to ensure the loading area and discharging area are clear of hazards - actions required for emergency situations - loading and discharge area segregation from other activities - sufficient manoeuvring area - ground conditions to support dump truck and load weight and maintains dump truck stability - communication requirements and methods with loading operator - working in hours of darkness and lighting requirements

Prepare the rear tipping dumper for use and operate machinery safely and efficiently

Explain and demonstrate all safety procedures to be adopted including:

- Correct starting procedure
- Mount and dismount the machine
- Correct operating procedure on slopes / inclines, different ground conditions, confined areas, limited visibility etc
- Identify and report any defects
- Correct tipping procedure, speed limits, machine suitability / capacity
- Follow all safe working procedures, material jams, haul routes etc
- Adhere to Road Traffic Act and road travel and traction aids
- Discharging techniques, types of materials / segregation and carrying capacities
- Haul route procedures, tipping on slopes, stability with raised bodies
- Check electrical safety, overhead / underground services
- use of seatbelts and other restraining equipment • adjustment of seating and steering wheel / levers position and mirrors
- steering and braking systems checks
- types and use of visibility aids and what factors can affect clear, all-round vision
- where and why vision is extremely important
- how and where issues can arise when vision is limited during operation
- warning beacons and other safety systems / lights are operable
- traction aids / diff-locks and when to be used
- tyre pressure monitoring systems
- legislative requirements for road travel e.g. licencing for travelling on the public highway

C205

LEARNING OUTCOMES

Travel and manoeuvre the dump truck safely across varying terrain and inclines	Explain and demonstrate travelling over various types of terrain, replicating typical site-type surfaces, in a loaded and unloaded state - factors for automatic and manual gear selection - how travel speeds and gear selection affect dump truck working efficiency, stability, safety, and emissions - use of primary and secondary braking systems e.g. retarders/hill descent control etc. - issues which can occur if departing from designated haul routes - types of underground services and the effects of travelling loaded machines near to/over services - effects of travelling close to edges, embankments and trenches - travelling on inclines in a loaded and unloaded state - how uncompacted surfaces affect stability - dangers of working on stockpiles and authorisation requirements - changes of centre of gravity when in loaded and unloaded state and when on inclines - procedures in the event of machine roll over.
Manoeuvre in areas of restricted space	Explain and demonstrate precautions to be taken when manoeuvring in areas of restricted space - visual checks of the area for hazards and how to determine if safe to proceed - check dump truck size relevant to working area, including working height, width, and steering angle - lighting requirements and issues that may occur due to poor light conditions - communication requirements with marshallers.
Position to receive loads	Explain and demonstrate gearing and travel speed selection when approaching loading position - types of body and discharge methods e.g. gravity discharge / walking floor/ejector, side extensions / spill-guards, tailgates etc. - various types of loading equipment, e.g. conveyers, hoppers etc. and characteristics of each - body load capacities including struck / heaped – weigh-load indicating systems - function of heated body - why ground conditions and level ground are important for loading purposes - procedures to be followed to ensure no unintentional movement of the machine during loading - minimising the need to reverse up to a loading machine - factors that ensure operative personal safety during the loading process including designated safe areas - FOPS cabs and factors that allow the operator to stay seated during loading
Ensure load integrity and security	Explain and demonstrate how different material properties will affect the weight / volume of materials to be carried - causes of overloading - what can and cannot be carried in the body - what the manufacturers requirements are for transporting loads - how to ensure that the body is not overloaded - how an overloaded body or offset load can affect stability and safety - factors with loads that project beyond the body - what is meant by maximum utilisation of the machine to transport granular-type loads - why load integrity is important to safe operations.

C205

LEARNING OUTCOMES

Transfer loads to different locations	Explain and demonstrate factors that affect safe and effective transportation of loads - prior confirmation on where each load needs to be transported to haul road etiquette between loaded and unladen machines
Discharge loads	Explain and demonstrate typical hazards within a discharge area and reasons for exclusion zones - what checks need to be carried out at the discharge area - typical hazards of discharging loads into trenches and over edges, including overrun prevention, substantial edge protection, and ground stability - ground conditions to prevent instability - vision requirements to avoid overrun - factors that can affect machine stability when raising a loaded body including stuck / slow discharge loads - effects of trapped loads with tailgate bodies - discharging with the body laterally unlevel - procedures for discharging loads including preventing unintentional machine movement - procedures for ensuring full discharge of the body and clearing the discharge area - travelling with raised body - how to form stockpiles
Environmental considerations	Explain and demonstrate procedures to be adopted including: • Clear visibility • Communication system – signals etc • Noise • Dust • Vibration • Ground contamination • Ground damage • Fuel spill • Oil spills • Fumes • Flying debris • Health and social reasons to reduce machine emissions • government industry zero emission initiatives • what 'tailpipe' emissions are caused by compression ignition (CI) diesel engines during internal combustion • air quality and the component gases of air • how engine emissions, including particulate matter affect air quality and the effects on human and environmental wellbeing • measures to reduce emissions during operations includingalternative/low emission fuels, fuel treatments and particulate filtration systems etc • efficient use of the machine and when and how minimising engine use can aid air quality and fuel savings • eco-friendly oils, fluids and lubricants • fuel-saving techniques for specific item of plant • appropriate disposal of waste • spillage procedures
Demonstrate knowledge and understanding of loading and unloading procedures for machine transportation	Explain / demonstrate the following: • Correct / secure position • All pressure released • Cleanliness and security • Refer to manufacturer's handbook

C205

LEARNING OUTCOMES

Carry out all end of work and shut down procedures	Explain and demonstrate procedures to be adopted including: • Shut down procedures and machine security • Clean machine thoroughly after use to avoid corrosion, facilitate maintenance, prevent personal contamination • Inspect machine for signs of wear and damage

The learning outcomes listed should not be considered in isolation and may be added to in order to accurately reflect the learner's duties and working environment