

Course Objectives for C205 - Dump truck: articulated chassis/Rear tipping dumper: up to 15 tonnes (novice)

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:

- Explain the hazards of working in the construction industry, and their responsibilities as dump truck operator
- Identify and extract information from the manufacturer's handbook/operator's manual, and other information sources including digital
- Locate and identify the major components, signs and decals, and all controls of the dump truck and explain their functions
- Conduct all pre-operational checks in accordance with manufacturers and legislative requirements
- Identify and maintain Personal Protective Equipment (PPE) and appropriate safety control equipment for dump truck use
- Safely get in and out the machine
- Prepare the dump truck for movement – site and highway travel
- Travel and manoeuvre the dump truck safely across varying terrain and inclines
- Manoeuvre in areas of restricted space
- Conduct all necessary safety checks at the loading and discharging areas
- Position to receive loads
- Ensure load integrity and security
- Transfer loads to different locations
- Discharge loads
- Explain environmental considerations of machine use
- Explain loading/unloading procedures for machine transportation
- Carry out all end of work and shut down procedures

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Learning Outcome	Instructor Notes
Explain the hazards of working in the construction industry, and their responsibilities as dump truck operator	Delivery to include: • Why the industry has many hazards and why safe working practices must be adopted and maintained • Why personal health and safety is not just physical injury and can include the effects of noise and vibration. All of which can lead to lost time, lost income, expense for the employer, fines, custodial sentences • Health & Safety at Work Act 1974, Provision and Use of Work Equipment Regulations (PUWER), Management of Health and Safety of Work (MHSW) Regulations, Construction (Design & Management) Regulations (CDM), Vibration at Work Regulations, Road Traffic Act, HSG144, LOLER, HSG47 GS6. in accordance with risk assessments, method statements, codes of practice and other relevant legislation, regulations, and industry good practice • operators' moral obligations, legal obligations, and environmental obligations • 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 for example marshallers, supervisors, other plant operatives, other occupations
Identify and extract information from the manufacturer's handbook/operator's manual, and other information sources including digital	Delivery to include: • 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
Locate and identify the major components, signs and decals, and all controls of the dump truck and explain their functions	Delivery to include: • The purpose of principal components, the basic construction, controls, and terminology • 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 • Purposes of Roll Over Protection Systems (ROPS) and Falling Objects Protection Systems (FOPS) and other protection systems • Types and use of traction aids
Conduct all pre-operational checks in accordance with manufacturers and legislative requirements	Delivery to include: • 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 and other related systems • replenish fuels, fluids and lubricants, and undertake grease-based lubrication activities • manufacturers periodic checks and operator level maintenance requirements • defect reporting 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

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- use of safety items for example struts for hydraulic tipping and steering rams

Identify and maintain Personal Protective Equipment (PPE) and appropriate safety control equipment for dump truck use

Delivery to include:

- What safety control equipment/PPE should be worn/used for machine operations and include the following: suitable safety footwear, ear defenders, face/eye protection, dust mask, suitable gloves, overalls, hard hat, Respiratory Protective Equipment (RPE), protective clothing and other related safety equipment
- Appropriate use of Local Exhaust Ventilation (LEV), such as 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

Safely get in and out the machine

Delivery to include:

- Working at height requirements
- Safe use of all hand holds and steps
- facing the machine when getting in and out the dump truck for operational and maintenance purposes
- effects of continually getting in and out the dump truck for example fatigue, increased risk of falling and other related risks
- safe areas to get in/out the dump truck for example ground location, other vehicle movements and other related hazards
- procedures for accessing the dump truck when carrying out adjustment and maintenance activities

Prepare the dump truck for movement – site and highway travel

Delivery to include:

- 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 effective 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 for example licencing for travelling on the public highway

Learning Outcome

Travel and manoeuvre the dump truck safely across varying terrain and inclines

Instructor Notes

Delivery to include:

- 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 for example retarders/hill descent control
- 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

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- 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

Delivery to include:

- 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

Conduct all necessary safety checks at the loading and discharging areas

Delivery to include:

- 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

Position to receive loads

Delivery to include:

- Gearing and travel speed selection when approaching loading position • types of body and discharge methods • various types of loading equipment, such as conveyers, hoppers and characteristics of each • body load capacities including struck/heaped • weigh-load indicating systems • function of heated body (if fitted) • 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

Delivery to include:

- 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

Transfer loads to different locations

Delivery to include:

- 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

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Discharge loads

Delivery to include:

- 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

Explain environmental considerations of machine use

Delivery to include:

- Health and social reasons to reduce machine emissions
- government industry zero emission initiatives
- what 'tailpipe' emissions are caused by IC (diesel) engines
- 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 including alternative/low emission fuels, fuel treatments and particulate filtration systems
- 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

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**Explain loading/unloading procedures for machine
transportation**

Delivery to include:

- Procedures for preparing the dump truck for loading onto a transporter
- traction and surface preparation requirements
- understanding of agreed methods of communication between the plant operator and others
- working at height requirements when driving onto or off a transporter bed

Carry out all end of work and shut down procedures

Delivery to include:

- Types of safe locations, areas, and ground/terrain types where dump truck may be parked and should not be parked
- reasons for ensuring safe parking and unintentional movement
- carrying out parking, shut down and isolation requirements according to manufacturer's instructions
- reasons for dump truck isolation including security and non-authorised use by others
- use of anti-vandalism equipment

**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*