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STEPHEN WOOD TRAINING SERVICES LTD

Ride-on-Roller



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Health and safety at work act 1974 –

designed to protect people and the environment from work

place activities. It places certain duties and responsibilities on employers, employees, self-employed people, designers and manufactures.

Employer's responsibilities - must ensure workplaces under their control are safe and free from hazards. Ensure the safety of employees, self-employed, visitors, trespassers and the general public who could be affected by the work. Everything they provide for use, tools, plant and equipment must be fit for purpose, safe to use and the personnel trained to use it

Employee's responsibilities- must take care of them selves and others who may be affected by their acts or omissions. Co-operate with their employer. Do not tamper with or interfere with or misuse anything provided for safety

Failure to comply with legislation- could result in loss of you job and all the financial implications that can bring but it could also result in prosecution. The severity of the breach of legislation and any accidents or incidents related would dictate what type of court proceedings you could face. If you have fulfilled your legal requirements and can provide proof of this in court then you would likely be found Not Guilty but If you were found guilty you could face a prison sentence or a substantial fine

To fully understand the above Act specific training and guidance is required

Method Statement- detailed description of how to carry out a job safely and efficiently. All involved in the work must be briefed on its contents. Workers must follow the Method statement unless they feel it is not suitable then they should stop and report it and have the method statement amended. Competent people must only amend Method Statement

Risk Assessment- is a legal requirement before work starts. It is a detailed assessment of the risk involved in doing and job and provides information on how to reduce the risk level down to an acceptable level.

Hazards - this is anything, which can cause harm to people plant or equipment.

- **Excavations or Trenches** – risk of collapse. The minimum distance to keep away from open excavations is at least the depth of the trench i.e. if its 2m deep you stay 2 m back



- **Working at height**- any place you can fall from and be injured is considered working at height. The top of a mound, climbing into or out of a machine. Standing by the edge of a n excavation
- **Slopes**- where ever possible the weight always faces up hill i.e. empty dumper skips face downhill and loaded skips face uphill. Extreme care should be taken if working across a slope. Avoid turning on slopes if possible
- **Overhead cables**- the minimum distance to be maintained form overhead cables mounted on wooden poles is 9m from the greatest reach of the machine and 15m from cables on metal pylons. Electricity can arc or jump a gap.

- **Confined spaces-** anywhere there is restriction on operating area can be considered a confined space. There is a greater risk of accident or damage. The Minimum distance that should be maintained between a fixed obstacle and the machine is 600mm (this is deemed to be the smallest distance a person can go through without being injured). if this distance can't be maintained then the area should be fenced off and signs erected. Fumes, dust, noise, lack of visibility and insufficient room to manoeuvre are all hazards associated with confined areas
- **Plant operations** – are regarded as “safety Critical operations”
- because of the potential risk of an accident.

Plant Operators can cause harm to themselves or other people if they carry out an unsafe act.

- **Pedestrian areas-** care should be taken when operating in pedestrian areas. A safe route for pedestrians should be provided with suitable signage and lighting. Enough room for material storage and vehicle movements is required. Noise, dust and fume levels should be reduced where possible. Required permits , method statements and risk assessments should be in place.

PUWER – Provision And Use Of Work Equipment Regulations

This is an amendment to a European regulation. It deals with the use of plant and equipment and has specific requirements including

- **Restraint systems-** seat belts must be worn at all times to prevent injury in the event of the vehicle overturning
- **ROPS (Roll over Protection Structure)** -prevent injury in the event of the vehicle overturning
- **FOPS- (Falling Object Protection Structure)** prevents injury from falling debris. If fitted to a vehicle then you do not need to wear the hard hat inside
- **Training and Instruction-** you must receive adequate instruction and training on any equipment before you can operate it
- **Fit for Purpose-** work equipment must be fit for purpose and safe to use
- **Information- Operators Manuals** and other information relating to the safe use of equipment must be with the equipment. This is to allow operators to check and gain necessary information To fully understand PUWER specific training and guidance is required

Environmental issues-

- **Refueling-** should only be done in a designated area. Clean containers and funnels should be used. Any spillage should be cleared up using suitable equipment. Waste should be disposed off in designated bins.
- **Condensation-** the machine should be refueled at the end of the shift to prevent condensation building up in the tank as the machine cools down
- **Reducing environmental damage-** Operate safely, operate efficiently, , Tip materials in designated places, don't mix materials, Switch off when not in use, Don't overfill when refueling, check tyre pressures, report leaks or damage, clear up spillage, dispose of waste in designated bins. Follow method statements and COSHH assessments
- **Designated routes-** should be adhered too. This will avoid damaging unspoilt ground, or completed work, or unnecessary contact will other plant or people. Due to the weight of the Roller there is an increase likelihood of sinking if not travelled on suitable ground

Types of dumper uses and limitations -



**Tandem
Vibrating**



Wobble Roller



**Combination Rollers
Sheep's Foot and Smooth Drum**

- **Tandem Vibrating Roller- general purpose used to compact materials on site.**
- **Wobble Rollers- used to compact Surface Dressing, the tyres are less likely to damage the material**
- **Combination Rollers** – suitable for compacting landfill and similar large areas
- **Articulated steering-** most Ride-on-Rollers have articulated steering, the front and the rear of the Roller are joined in the middle by a kingpin. A hydraulic ram or rams activated by turning the steering wheel turns the dumper. The engine supplies the hydraulic oil to the ram by pump, if the engine is switched off the steering becomes very stiff. The kingpin also allows the Roller to oscillate this helps maintain traction by allowing the drums to remain on the ground when travelling on rough terrain, Articulated steering can be awkward in tight areas or if tight to structures because of its design. When you turn the steering wheel the front and the back go one way and the middle goes the opposite way this could cause you to hit obstacles close by. If tight to an obstacle then you must not over steer or you will hit it. Another danger is the crush zone formed between the two halves when you apply a full lock, never allow anyone to stand on the step or between the two halves of the Roller when the engine is running

Pre Use Inspections -

- Plant should be checked according to the manufacturer's specifications. The checks should be recorded in the defect book or daily check sheet. Any defects should be reported
- Suitable PPE (gloves) should be worn when carrying out the prestart checks to prevent skin disease and contaminating the controls

- Engine oil, Hydraulic oil, Transmission oil, Coolant, Brake fluid, Tyres and the condition of the dumper should be checked



(Checks will vary depending on make and model always read the operators manual)

- If topping up with oil always do so in the designated area, use clean funnels and jugs or containers and clean around filler cap to prevent dirt entering the system
- Most dumpers are fitted with a radiator to keep the engine cool. This is a pressurized system which pumps water around the engine keeping temperature down. Do not open a hot radiator or filler cap as the hot liquid inside will be released under pressure and could scald or burn

Plant Stability -

- **Travelling or operating** the machine affects the stability. Travelling across slopes, turning at speed, too close to excavations can all lead to instability and possible overturning.
- **Centre of gravity-** is the point of balance of a load or of the machine. The higher the machine is the higher the centre of gravity of the machine. This can affect the stability of the machine Small Rollers have a small footprint to height ratio and can be less stable

Travelling the roller-

- Check all around the Roller is clear before mounting
- Mount the Roller and fit seat belt (**Seat belt** will secure operator to the seat and reduce potential injury in the event of overturning
- Start the Roller
- Engage gear
- Sound horn to warn others in area
- Look all around to ensure its clear then release handbrake and move off
- Travel at a speed suitable for the conditions

Operating on a slope -

- **Avoid driving across a slope as there is an increased risk of overturning**
- **Ensure there is the Roller has sufficient ground clearance and is capable of travelling on the slope • Check the ground type for grip**
- **Ensure the area is free of obstructions**

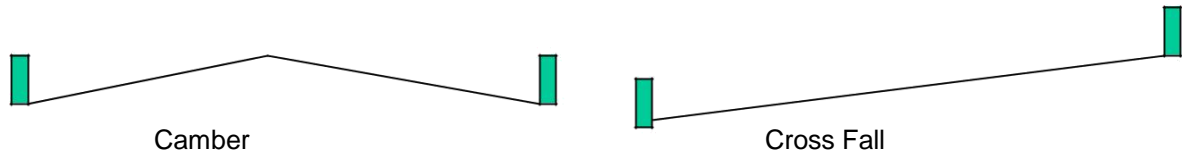
Selecting the a Suitable Roller –

The selection of a Roller for a task and number of passes depends on a variety of factors but is mostly decided by site management and not the operator, but the operator should have an understanding of the factors that determine the selection

- Type of material- surface Dressing may require a wobble Roller to reduce damage to the material
- Weight of the roller will affect the number of passes required
- Drum width and Vibrator settings
- Depth of material will affect the choice of Roller and number of passes
- **Vibration System-** increases the efficiency of the Roller. Amplitude (the weight of the blow) and Frequency (The speed of the vibration) are
- **Low Frequency rollers are use on thin layers**

Setting up to compact -

- Identify the area of operation
- Identify all metal work or manhole covers in the area of operation
- Ensure area is free of unauthorized personnel and other obstructions
- Consult method statement for the number of rolling passes
- **Rolling Pass- is up and back on the same line and is the method used to get consistent compaction and to reduce the risk of lines on the finished surface**
- **Sign and fence off area if necessary**
- **Identify cambers**



A Camber- is a slope or slopes formed on a surface to prevent rain standing on the surface. The operator Start compacting on the low side to avoid displacing the material

Compacting and operating Techniques

- **Ensure the area of operation is level and free of obstructions**
- **No unauthorized or unnecessary personnel in the area**
- **Identify the area of operation and any metal work or other items within the area**
- **Know the number of rolling passes required, to ensure the correct level of compaction is achieved he ground is compacted to remove any air pockets or voids and reduce any possible ground settlement (subsidence or sinking of the ground) at a later stage which could affect anything built on the ground.**

Placing the material down in too deep of layers (max approx 200mm deep layers can cause poor compaction. This will vary depending on the type of material).

Incorrect Rolling techniques and insufficient number of passes

is the removal of moisture from the material increasing its density

- **Make the first pass without the vibrato to allow the material to spread**
- **Engage travel and move off before engaging the vibrator and switch off vibrator just before reaching the end of the pass Never leave the vibrator engaged when the Roller is not moving as it could sink in, damage the surface, cause damage to the Roller if on a hard surface, or move sideways if on a hard surface**
- **Maintain good all round observation when operating**
- **Set the Roller to a low frequency if Rolling thin layers**
- **Take care when rolling up to the edge to prevent pushing the material**



Parking The Roller

- Park on level ground
- Do not block entrances or exits
- Do not park on soft or wet ground
- Do not block pedestrian routes
- Do not leave close to trenches
- Handbrake on and out of gear
- Allow engine to idle for 1-2 minutes before switching off to allow turbo to slow down. Failure to do this could damage the turbo
- Remove key and isolate to prevent unauthorized use

Travelling the machine on the Public Highway

- Machine must be clean
- Taxed and insured
- lights meeting road legal standards
- Number plate
- Operator must hold the correct Full UK Driving license category B and G, and be over 17 for Rollers
less than 11.69 t fitted with metal, hard rolls and be over 21 for all types of Roller

Transporting the machine -

- The transporter driver is responsible for the loading operations
- A level area with sufficient room to manoeuvre should be selected
- No overhead obstructions
- The machine should be clean
- The transporter should be suitable and in good condition
- The ramps should be adjusted to suit the machine and a winch used if necessary
- The operators manual should be consulted to find the loading procedures
- A banks man should be used
- The area should be free of people and other plant