GUIDANCE NOTE	Power Float (Use Off)	Code: G714	Issue: A

INTRODUCTION

A power float, or power trowel, is a concrete finishing machine designed to smooth the surface of the concrete for a high standard, durable, flat and hard finish. Shallow holes and slight high-spots can be levelled off with this tool. However, methods should be taken to reduce these, as far as possible, before using a power float. Typically, power floats are motorised by an internal combustion engine. However, electric versions are also available. They can vary in size from small pedestrian-operated equipment to large operator ride-on machines; some advanced models may also have features such as hydraulically powered steering.

FLOATING

Floating is the initial part of the work and must be undertaken before the surface has dried completely. However, the surface must be sufficiently dry to maintain the weight of the machine and operator without causing damage to the surface. This stage levels any remaining shallow holes or high points in preparation for finishing.

FINISHING

Once the surface has been “floated” the blades of the float are changed or the floating pan is simply removed to reveal the finishing blades. The finishing stage should be started when the surface has dried. For the finishing pass, the blades are angled to suit the concrete - increasing the angle after each pass - the steeper the angle the harder the finish.

TYPICAL HAZARDS

Listed below are typical hazards that may be encountered during power floating operations. The list is not exhaustive and site / equipment specific risk assessments will need to be carried out before the operation begins.

- Cuts / lacerations resulting from contact with the blade.
- Being struck by ejected materials from the rotating blade.
- Exposure of operatives and others nearby to hazardous dusts.
- Exposure of operatives and others nearby to excessive levels of noise.
- Exposure of operatives and others nearby to carbon monoxide gas.
- Injury from manually handling (pedestrian operated models).
- Exposure to excessive levels of Hand Arm Vibration (pedestrian operated models).
- Exposure to excessive levels of Whole Body Vibration (ride on models).
- Fire / explosion (petrol driven models).
- Electric shock (electrically powered models).

CONTROL MEASURES

- The blade must be adequately guarded. This is usually addressed by the presence of a fixed guard which should come fitted with the machine.
- The surface being finished should be clean and free of any debris or materials. Significant high spots should be reduced by hand before floating.
- Where dust is produced this is likely to be hazardous. A COSHH risk assessment should be conducted and engineering controls such as dust suppression or LEV should be given priority over PPE.
- Consider using lower noise producing equipment such as electrically powered floats and look at the machines manufacturer's specifications regarding potential noise levels. If noise levels are likely to exceed acceptable levels then a noise risk assessment will need to be done with appropriate control measures being implemented.
- Never use diesel or petrol powered floats in areas of poor ventilation.
- Where pedestrian operated models are used a manual handling risk assessment will need to be conducted.
- When selecting hand operated machines obtain modern low vibration producing equipment. Ensure operatives do not exceed vibration exposure limits by monitoring exposure levels and reducing exposure through the use of PPE such as anti-vibration gloves. Where possible rotate operatives to reduce exposure.
- Whole body vibration for ride on machines will need to be assessed using the manufacturer's guidance.
- Ensure a safe system of work is in place for the re-fuelling of machines and that flammable liquids are appropriately stored at all times.
- Electrically powered machines must be maintained to the requirements of the Electricity at Work Regulations.

OTHER CONSIDERATIONS

- All operatives must be adequately trained / competent to operate this type of machinery. They must be fully briefed on the method statement and risk assessment for the operation to be undertaken.
- Operatives using pedestrian operated machines will need to be physically fit.
- Electrical tools should be subjected to Portable Appliance Testing (PAT) and have a daily visual inspection carried out by a competent operative.
- All machines must be fitted with adequate guards and safety devices such as an engine cut-out switch and triple guard ring and must conform with the requirements of the Provision and Use of Work Equipment Regulations (PUWER)
- Ensure the correct blades are used and are changed at appropriate intervals or when they become damaged / worn. Blunt blades will produce excessive noise levels.
- Work equipment must be entered into a PUWER register and weekly inspections recorded.
- An effective fault reporting system must be in place and any equipment identified as being faulty removed from use / repaired by a competent person immediately.
- Adequate barriers must be provided, including any necessary signs to control access where required.
- Ride on machines are designed to be used on flat level surfaces so areas where the machine could potentially tip over such as slab edges should be avoided / barriered off.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- The risk assessment process should identify PPE needs. Where PPE is provided it must be appropriate for the risk and, where required, be fitted to the individual.
- The standard requirement for this type of operation is hard hat, eye protection, safety footwear, gloves, dust mask and hearing protection.

- Where emissions such as dust and noise cannot be controlled by any other means and operatives working nearby may be affected then PPE control zones will need to be set up and controlled.

REFERENCES

Other Guidance notes that should be read in conjunction with this Guidance note are:

- B101 Upper Limb Disorders
- G702 Electrically Operated Tools (Construction)
- G303 Machine Guarding
- G302 Plant & Equipment
- H400 Hazardous Dusts, Fumes, Gases, Vapours

Other key sources of information:

- The Provision and Use of Work Equipment Regulations