

# Screeners

*Note: It is recommended that you read the Supporting Information page before you read this factsheet.*

## Preparation and completing work *(Preparation)*

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- Screeners are used to support crushing operations in construction-related activities such as demolition and clearance work. They can be fed directly by a crusher or independently using other plant such as a loading shovel. As with crushers, screeners are a staple machine within the aggregate processing and production sector and are traditionally integrated with a crusher within the processing operation. The majority of types used for construction activities are mobile units, either mounted on a road-going chassis or, more commonly, as self-propelled units that can be travelled around a site.
- There may be a team of operatives involved with the screening operation, including one or more designated screener operators and loading personnel, who may also be involved with the crushing process.
- Incidents and accidents do occur with screeners and screening operations and the aim of this factsheet is to outline issues that have occurred and remind those involved in screening operations of the good working practices that should be followed.
- Proper pre-use checks are a requirement for the safe operation of any type of plant, including screeners. The operator (that is, anyone who is authorised to operate the screener) is expected to undertake these checks at the required intervals.
- Failure to properly check all relevant components before work could lead to incidents, near misses and injuries because faults can cause a malfunction or a component to fail, which affects both performance and safety.
- Checks and inspections that need to be made are indicated in the operator's manual for the screener. Although the frequency of checks will be determined by the manufacturer, extreme or unusual operating conditions may require more frequent checks.
- One typical daily running check that should be undertaken before work starts would be the function of the emergency shut-down or stop buttons. The operator must immediately report any defect they find, even if they think it is minor, such as a small tear in a discharge belt, as they may not be qualified to make a suitable judgement.
- A method statement would or should have been devised that, amongst many factors, identifies all risks and measures to be taken, such as dust control, relevant PPE, the sequence of work, the number of personnel involved in the screening operation and particularly the procedures for clearing any blockages.
- It is also important that all those involved in the screening operation have been informed of the contents and the actions required of them. If conditions change during operations, such as encountering a new material type, the method statement needs to be amended by an authorised person before work restarts.
- The operator or anyone undertaking maintenance of screeners with a remote-controlled pendant needs to ensure that both the power supply and the remote pendant have been isolated and inactive before any pre-start checks, inspections and maintenance work is carried out.
- Many types used in construction-related activities are self-propelled and can be travelled to various parts of a site. Before any movement of the screener takes place, all components such as discharge conveyers need to be raised, folded or secured and that the travel route is checked for hazards such as poor or soft ground, overhead hazards and movement of other plant and people.
- Whilst travelling a tracked screener to a new location, the operator (if on foot) should ensure that they do not stand between the moving screener and a structure or object, as they could be trapped and crushed.

## **Working safely and with others** *(Working safely)*

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- The area around any screening operation is a danger zone and operators and supporting personnel have been struck by the bucket of a loading machine, when standing on an access platform. Guidance from the Health and Safety Executive states that no one should be on a working platform once the feed or discharge rates have been set and checked.
- Where a screener is being fed by a loading shovel, the loading ramp should be at no more than a 1 in 10 incline and designed so that the loading shovel discharges the load from the bucket whilst the machine is level, and not discharging uphill.
- Discharging uphill may limit the loading shovel operator's vision and they may find it harder to control the machine when discharging. A method of communication and agreed signals or instructions should be established with the loading plant operator before work starts.
- Both processed materials and overspill from the screening operation will accumulate around the machine and operators, so supporting personnel need to take into account slips and trips, particularly on areas such as a platform where a layer of dust can pose a particular slip hazard. Personnel need to ensure when accessing a platform that there is sufficient foot grip to minimise slips and trips.
- When workers need to access any part of the screener during pre-start checks, when setting up the machine or dealing with blockages, working at height requirements need to be considered and, in many cases, restraint harnessing may need to be worn.
- Screening operations near to public areas can affect those nearby as they may be subjected to excessive noise and dusts, for which some form of shielding can be specified to prevent this.
- One method of limiting airborne dusts is to minimise the drop height from a discharge conveyer and to fit a hood to the end of the discharge conveyers, as too high a drop height to a stockpile can produce excessive dust.

## **Maintenance and clearing blockages** *(Maintenance)*

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- Clearing blocked or stalled screeners is a known cause of many injuries and deaths, so correct procedures must be followed. There are various reasons for a stalled screener with one factor being the jamming of material in the screening chamber.
- Before any stalled or blocked screener is cleared, a permit to work procedure must be devised and followed. The first action to be taken is the shutting down of the engine/power supply followed by a check to ensure that all rotating components have fully stopped, and the feed and main conveyers are isolated before attempting to clear and enter any stalled screener.
- All rotating and moving parts should be sufficiently guarded to prevent any contact with operating personnel. Guarding cannot be removed during operation and can only be removed during maintenance activities by personnel who have had the appropriate training and when the power supply of the screener is isolated.
- Screeners are designed to work on a level surface. A screener located and working on sloping ground may not be screening material according to the desired settings or grades.

## Sample questions

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The following questions are based on the text within this factsheet and indicate how the questions and answers are structured. Based on the factsheet, there is only one correct answer. The correct answer to each question is indicated at the end of this factsheet.

**Q1. On a screener fitted with a remote control pendant, what should be ensured before maintenance work or blockage clearing is carried out?**



That the cable is not trapped by any part of the screener



That all travel movement controls are set to the 'off' position



That the pendant is isolated and inactive



That the pendant remains with the operator at all times

**Q2. Before manoeuvring a mobile tracked screener to a new location, what needs to be ensured?**



That the machine's fuel tanks are full



That the platform guard rails have been replaced



That the discharge conveyer will be behind the direction of travel



That the route to the new location is clear of hazards

## Study checklist

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This checklist aims to act as a study aid to ensure that the reader has identified and understood the relevant parts of this factsheet.

### Do you know?

1. Where the information about what check needs to be carried can be found.
2. Who determines the frequency of the required checks and inspections.
3. Why even minor faults must be reported before the screener is used.
4. What the purpose of the method statement is and when it needs to be updated.
5. What precautions need to be taken if carrying out checks on screeners fitted with a remote control pendant.
6. What the procedures are before moving a mobile screener to a new part of the site.
7. What could be a hazard to the operator when they are travelling a mobile tracked screener.
8. Which areas of the screening operation are considered hazardous.
9. Under what conditions is standing on a working platform an acceptable practice.
10. What the danger could be to a screener operator if the screener is being loaded by an excavator.
11. What the maximum gradient is of a ramp for a loading shovel that is loading a screener.
12. Why overspill around the screener is hazardous to people on foot.
13. When fall-restraint harnessing would be required.
14. The methods that can reduce airborne dusts.
15. What is meant by a stalled screener and what the possible causes are.
16. What the procedures are before entering any stalled screener.
17. What the conditions are when the guards of a screener can be removed.
18. Why screening operations should take place only on level ground.

**Answers to sample questions: Q1: C and Q2: D**