

Compaction equipment: User and public safety

This 'best practice' was written in consultation and with the support of the Waste Industry Safety and Health Forum (WISH).

Scope of this guidance

This guidance is for site managers, supervisors and operators and at premises where balers/compactors (packer units) are used to process materials from a number of different sources. It is also relevant to hirers and leasers of this equipment.

Packer units and closed skips are frequently placed in communal areas for use by a number of users and where the public and other workers have access, such as:

- retail premises;
- offices; and
- civic amenity sites (CA sites).

This document focuses on public safety and risks to operators. Reference to this guidance may help industry dutyholders to devise, institute, monitor and revise methods of work on their sites

Hazards

There is the potential for children and adults to gain unauthorised access to the dangerous parts of this equipment. Serious injury or death can result if the machine is then operated, or when containers are collected or replaced.

Injury can be caused by inadequate guarding and by unsafe systems of work, including inadequate isolation/lock-off procedures when changing skips, clearing blockages etc.

Risk assessment

Packer units are often positioned in areas remote from frequent and direct supervision, and this can influence the safety of site employees, pick-up drivers, and members of the public. Your risk assessment should therefore address:

- their positioning; and
- the activities that do or could potentially take place at them (including bin servicing, possible interactions with the public etc).

Other risks, which are not covered in this guidance and may be revealed during your risk assessment, include:

- transport;
- falls from height;
- slips and trips; and
- manual handling.

For advice on controlling these risks, see *Further reading*.

Work should be monitored at appropriate intervals. This will help you identify potential flaws in your systems of work. For example:

- Do employees follow your agreed systems of work? If not, why not?
- Are your systems adequate to control the risk? Do they need revising?
- Is your procedure sufficiently frequent? Do you need to do certain tasks more (or sometimes even less) frequently?
- Have any changes occurred since the last risk assessment?
- Are measures to exclude unauthorised access effective?

You should review your risk assessment regularly.

Control measures

Safe site

- Packer units should be located and positioned to avoid or minimise transport risks and access by unauthorised people. This is particularly important if the unit is located in a public area, such as a shopping centre service area.
- Providing lockable fencing around these units can be an effective way of preventing unauthorised access. The height and design of such fencing should reflect the risks under foreseeable circumstances particular to the unit's location. Typically, 2-metre high fencing is found at these units. Fencing should be difficult to climb, and any gaps provided to assist cleaning should be small enough to prevent unauthorised access.
- Adequate lighting will assist safe operation and may deter unauthorised access.
- In areas where the public have access, the doors to closed skips should be locked at all times when they are not in use, especially 'out of hours'.
- Areas immediately around the unit should be kept free from obstructions, accumulated rubbish and other items which may interfere with skip exchange activities, or may enable people to use them as a means of access to the dangerous parts.

Safe equipment

- All dangerous parts of machinery should be adequately guarded. Guarding should take account of both routine use and foreseeable problems and misuse.
- Where the equipment is in public areas, gaps in guarding (such as those provided for cleaning) should effectively prevent potential access by children.
- All guarding provided to prevent access to the dangerous parts, and any interlocking devices fitted, should be adequately maintained.
- Controls should be secured so that unauthorised operation is effectively prevented. Effective electrical isolation, lockable controls and/or dedicated key operation are methods commonly used to achieve this.
- Where a bin lift is used to load the unit, the hoist-way should be fitted with a perimeter fence to prevent access during use. Since access is regularly

required, doors in this fencing should be fitted with interlocks to prevent access during hoist movement. Controls should be situated outside this enclosure away from bin lift movement and hold-to-run controls (where release of the control will arrest all machinery movement) are preferred.

- Signs on the units needs to be simple and bold (such as pictograms) to take account of possible use by those for whom English is not their first language.
- Instructions on basic use need to be placed on the unit itself – users may not have access to operating manuals.

Safe systems of work

You should use your risk assessment to identify safe systems of work. In particular, your safe systems of work should include (but not be limited to) two activities in which several serious accidents have occurred:

- dealing with blockages; and
- skip transfer activities.

Blockages

There is a history of workers being killed while clearing blockages at compactors. Dealing with blockages should therefore be well thought out and subject to a written safe system of work.

In addition to your written safe system of work for clearing blockages, it recommended that you have a permit-to-work system in place for access to the compaction chamber, ram and other dangerous parts of machinery.

Before attempting to clear any blockage, you should ensure that:

- a permit to work is issued and that it clearly sets out how the job should be done;
- operation of the equipment is prevented by isolating the electrical supply and effectively 'locking off' the machine controls. To prevent dangerous parts moving under gravity or residual pressure, it may be necessary to use physical scotches or relieve stored pressure in fluid power systems before attempting to clear blockages;
- the permit is authorised and monitored by named and competent individuals; and
- all guards are replaced before the equipment is reinstated.

You may decide that you do not have sufficient expertise in-house, and therefore have to rely on specialist contractors, the machinery supplier or other competent external party to deal with blockages.

Skip transfer

To minimise the risk of vehicle collision during lifting operations, keep the area around the units clear (eg of parked cars, bins, waste etc). Fencing, bollards, painted lines etc can assist in keeping the area clear for collection. In some cases, before the servicing vehicle arrives, it may be necessary to temporarily keep the area clear by using cones, bunting, signs etc.

Members of the public and any non-essential staff should be effectively excluded from the area during this activity. If possible, choose an appropriate time of day to do this work, when no one is around. Your risk assessment is likely to show that staff are needed on site to ensure that the immediate surrounding area is clear of pedestrians before skip transfer begins. Workers assisting reversing activities

should be adequately trained, be aware of the risks, and remain in clear view of the vehicle driver at all times. If at any time the driver cannot see the assistant, then they should stop!

Safe operator

- Manufacturers and suppliers should provide information on the safe operation of packer units.
- Packer units should only be operated by suitably trained staff. Training should cover operation, identifying and reporting defects, and what actions should be taken if a defect or blockage is found. To prevent blockages and problems during container removal and tipping of waste, training should include what materials are suitable/unsuitable as feedstock.
- Signs and instructions on units should be maintained in a readable condition.
- Consider the special training needs of temporary or part-time workers, and those who may not have English as their first language.
- Refresher training should be provided periodically.
- You should regularly monitor and review operations to ensure that safe working procedures are carried out and remain effective.

Further reading

HSE website

Waste management: www.hse.gov.uk/waste
Falls from height: www.hse.gov.uk/falls
Workplace transport: www.hse.gov.uk/workplacetransport
Slips and trips: www.hse.gov.uk/slips
Manual handling: www.hse.gov.uk/msd
Safe driving – Sheeting and unsheeting of tipper lorries:
www.hse.gov.uk/workplacetransport/information/sheeting.htm

Safe transport in waste management and recycling facilities HSE 2006
www.hse.gov.uk/pubns/waste09.pdf

Waste industry safety and health: Reducing the risks Leaflet INDG359 HSE 2002
Web only: www.hse.gov.uk/pubns/indg359.pdf

Guidance for the recovered paper industry Booklet INDG392 HSE Books 2004
(single copy free or priced packs of 5 ISBN 978 0 7176 2807 0) Web version:
www.hse.gov.uk/pubns/indg392.pdf

Guidance on permit-to-work systems: A guide for the petroleum, chemical and allied industries HSG250 HSE Books 2005 ISBN 978 0 7176 2943 5

Five steps to risk assessment Leaflet INDG163(rev2) HSE Books 2006 (single copy free or priced packs of 10 ISBN 978 0 7176 6189 3) Web version:
www.hse.gov.uk/pubns/indg163.pdf

Supply of Machinery (Safety) Regulations 1992 SI 1992/3073 The Stationery Office 1992 ISBN 978 0 11 025719 8

BS EN 294: 1992 *Safety of machinery. Safety distances to prevent danger zones being reached by the upper limbs* British Standards Institution
ISBN 978 0 580 21142 3

BS EN 1088: 1996 *Safety of machinery. Interlocking devices associated with guards. Principles for design and selection* British Standards Institution
ISBN 978 0 580 25826 8

The Waste Industry Safety and Health forum (WISH) exists to communicate and consult with key stakeholders, including local and national government bodies, equipment manufacturers, trade associations, professional associations and trades unions. The aim of WISH is to identify, devise and promote activities which can improve industry health and safety performance.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This document is available at: www.hse.gov.uk/pubns/waste08.pdf

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