

Safety Alert: Failure of lifting bars on waste compaction containers

HSE has recently investigated the failure of a wishbone hookbar of a type that may be fitted to compactors, containers and similar types of equipment designed to be hoisted onto hook-loader vehicles.

This alert raises the potential for similar failures, and action that can be taken.

Wishbone hooks ARE NOT inherently unsafe, however they are a safety critical component.

'Wishbone' design hook bars

These hook bars are butt welded to the steel plates of the container. It is a single jointing interface. If the weld fails, there can be sudden and catastrophic failure of the lifting operation.



Other designs of hook bar

Designs that conform to the Container Handling Equipment Manufacturers Association (CHEM) Technical Standard TS8, will **not** fail in a similar manner. With hook bars manufactured to the CHEM standard, the bar passes through openings in the surrounding side plates and is welded to both inner and outer faces of the supporting plates. Failure of a weld still allows support of the hook bar through the side plate.



Advice for manufacturers

Work equipment should be constructed or adapted to be suitable for the purpose for which it is used or provided. Those Designing and Manufacturing containers fitted with the wishbone hook bar should assess the criticality of the hook bar connection in relation to its intended purpose. Assessment may identify the following as suitable steps:

- Reducing the criticality of the component, by installing additional safeguards, or
- Stipulating regular inspections of that component. (The time period between inspections should be based on calculations of the anticipated loads, stresses and strains, corrosion, deterioration and safety factors used in the design process i.e. fit for purpose.) The methods of inspection should also be stipulated (e.g. NDT testing methods).

Advice for importers and suppliers

Importers/ hirers/ suppliers of equipment with the wishbone hook bar should clarify the designed capabilities of the component with the Manufacturer. Maintenance instructions must reflect the criticality of the component. The hirer must inform the customer of the safety criticality of the hookbar component so that work instructions can be formulated accordingly i.e. fit for purpose.

Advice for Users

The User is responsible for the maintenance of the work equipment. Where equipment is on hire, contractual arrangements for maintenance should be clarified and information relating to service life should be given to the User.

Any maintenance and inspection regime should be based on the manufacturers recommendations, and it is advised that you approach them for this information. You will still need to make a risk assessment, taking into account the intensity of use, operating environment and variety of operations i.e. fit for application. Depending upon the manufacturers' recommendations, maintenance may involve more detailed testing of components (e.g. non-destructive testing) and not placing sole reliance on a visual inspection.

Advice for those handling container units

Those handling container units must carry out a visual check on the hookbar before attempting to lift the unit. This should be carried out regardless of configuration. It should be noted that the scope of a pre-use check would be limited to matters found by the transporter driver. Pre-use checks ARE NOT a substitute for maintenance.

Awareness to the Laden weight of the compaction skip or container

This is a relevant factor in considering the design life and application of all compactor unit/ containers.

The hookbar is considered to be part of the load being lifted.

The capacity of the container (or combined compaction skip and container) in terms of its laden weight should be clearly stated, to ensure that the hookbar, welds, sideplates and other components are correctly engineered to this rating.

Manufacturers, suppliers and users should ensure that the laden weight of containers is known and that the equipment is designed and maintained accordingly.

Users should ensure that the equipment is used within its designed capabilities, i.e. that it is not overloaded.

Those handling container units should ensure that lifting equipment is capable of lifting the maximum stated laden weight of the container.

Further detailed advice is given in:

Simple guide to the Lifting Operations and Lifting Equipment Regulations 1998
<http://www.hse.gov.uk/pubns/indg290.pdf>

Simple Guide to the Provision and Use of Work Equipment Regulations 1998
<http://www.hse.gov.uk/pubns/indg291.pdf>

INDG 270 Supplying New Machinery
<http://www.hse.gov.uk/pubns/indg271.htm>

INDG 271 Buying New Machinery
<http://www.hse.gov.uk/pubns/indg271.htm>

This Safety Alert was issued by the Waste/ Recycling Section of the Health and Safety Executive on 25 June 2007.