



TIN 052

Lifting of Intermediate Bulk Containers (IBCs)

1.0 Scope

This Technical Information Note deals with the issues associated with the lifting of Intermediate Bulk Containers by cranes on construction sites.

2.0 Introduction

Intermediate Bulk Containers (IBCs) also known as IBC tank, IBC tote tanks or pallet tanks) are increasingly being used for the delivery of liquids, hazardous and non-hazardous, to and from construction sites. The lifting of IBC's by cranes can be hazardous as the fluid within the container may move, as the load is lifted, and change the centre of gravity of the load. If the IBC is not connected to crane in a safe manner the IBC may fall. The risk can be reduced by following safe slinging techniques and applying caution especially when lifting partially filled IBCs where the risk of fluid movement is heightened.

3.0 Types of IBC

3.1 Composite IBC - IBCs with a plastic tank surrounded by a metal cage with integral pallet at the base. The tank is typically made from High Density Polyethylene (HDPE). The contents of the IBC normally are visible through the plastic tanks. The integral pallet may be made from steel, wood or plastic. Some composite IBCs may have integrated top lifting points.



Figure 1

3.2 Metal IBC - IBCs with a metal tank with an integral metal pallet at the base. The contents of the tank will not be visible and the contents more difficult to establish. Some metal IBCs may have integrated top lifting points.



Figure 2

3.3 Plastic IBC – IBCs made entirely from plastic materials with an integral pallet at the base. The contents of the IBC normally are visible.




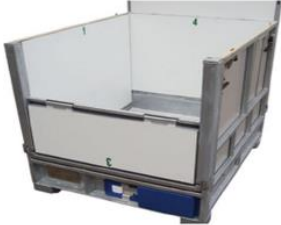

Figure 3



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**3.0 Type of IBC (continued)**

3.4	<p><b>Flexible IBC</b> – IBC having the body made of a flexible material such as woven fabric, plastic film or paper, designed to be in contact with the contents (either directly or through an inner liner), and collapsible when empty. The IBC may have an integral pallet or be mounted on conventional wooden pallet. The visibility of the contents of the IBC will depend on the materials of construction.</p>	
		
<b>Figure 4a</b>	<b>Figure 4b</b>	<b>Figure 4c</b>

**4.0 Precautions when lifting an IBC**

IBCs should not be lifted by:

- a) threading lifting slings or loose lifting bars through the pallet pockets at the base of the IBCs.
- b) crane fork attachments (with or without load netting or straps)

This is because movement of fluid in IBCs will alter the position of the centre of gravity and could allow the IBCs to slide on and/or rotate beyond the capability of underslung support.

It is recommended that the following precautions are taken to ensure that the IBCs and the material they contain are lifted safely from the delivery vehicle:

1. On delivery to site the IBCs should be checked, prior to lifting, to ensure that they have not been damaged during transit and that there are no leaks from the filling and discharge ports.
2. The content level of the fluid within the IBC should be ascertained.

It is recommended that IBCs are unloaded from the delivery vehicle by one of the following methods:

- a. With the forks of a lift truck or telehandler inserted into the pallet pockets at the base of the IBC.
- b. With a crane with the lifting slings attached to the designated lifting points on the top of the IBC container.
- c. With a crane with a purpose made lifting frame that includes a restraint strap(s) to secure the IBC (see **Figure 5**). Lifting frames that do not include straps to secure the IBC to the frame should not be used (see **Figure 6**)

If IBCs without designated top lifting points are to be lifted by a crane to another position on site, and a suitable lifting frame is not available, they should first be removed from the delivery vehicle by one of the above methods and placed into a stillage that has designated top lifting points. (see **Figure 7**). The IBC should be secured within the stillage by restraint straps.

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**Figure 5 Lifting frame with restraint straps**



**Do not lift in this manner**

**Figure 6: Lifting frame without restraint straps**



**Figure 7: IBC placed inside stillage with top lifting points and restraint straps**