

PREVENTION OF FALLS FROM ISO TANK CONTAINERS CONFORMING to ISO 1496-3



Summary of Protocol between –

- Health and Safety Executive

- ISO Tank Container Operators and Members of the

- International Tank Container Organisation (ITCO)

INTRODUCTION

During 2004 and 2005, after several consultation meetings, I T C O and the HSE have produced a working understanding of the key requirements for minimising the exposure from the risks associated with working from height in the Tank Container Industry within Europe, notwithstanding that most of I T C O's members operate globally.

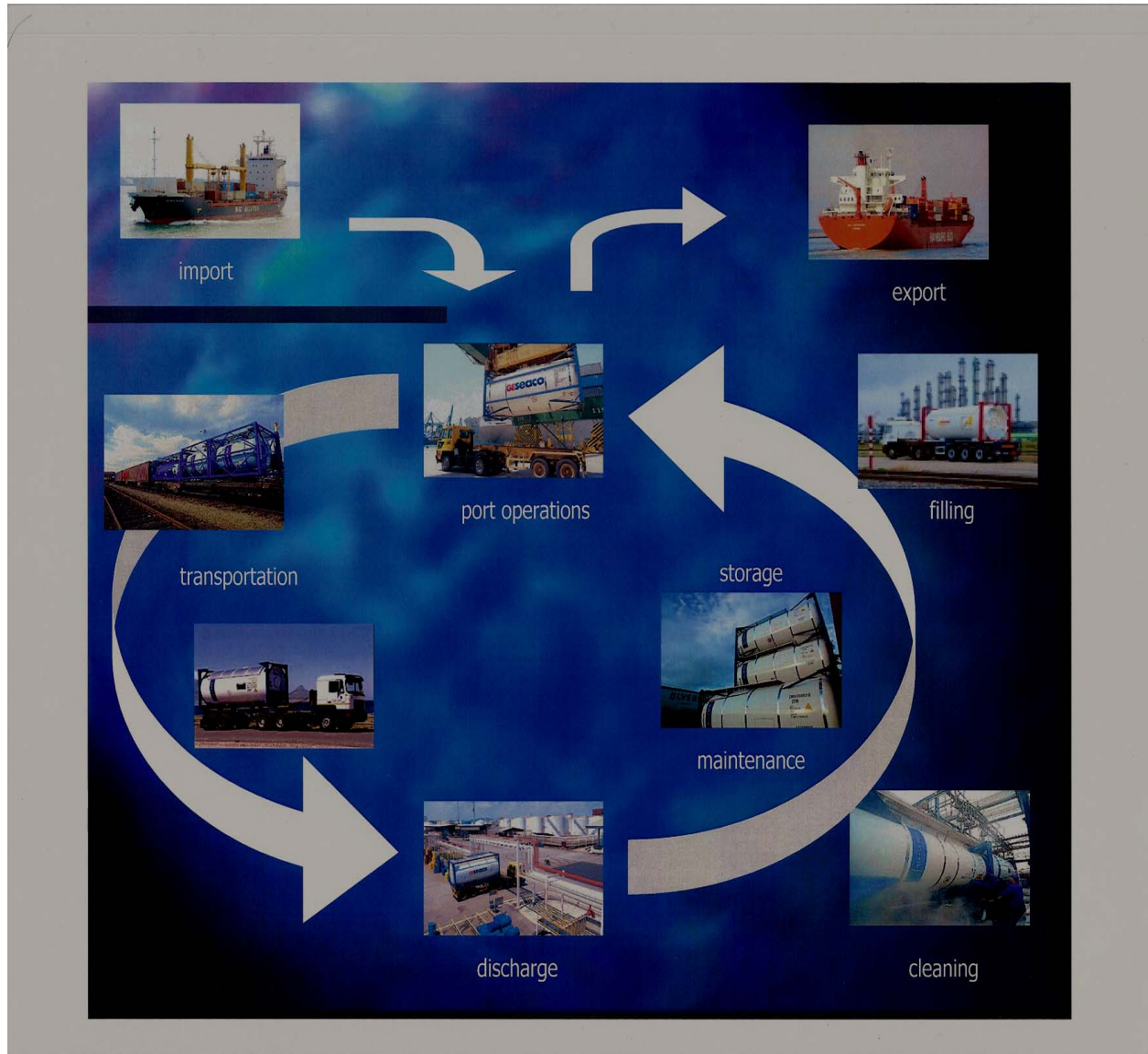
The I T C O members, who represent the majority of leading tanker operators within the UK/Europe/World, specifically sought to produce an eight year plan to radically improve the standards applied across the industry. The main aims are to ensure:

- a) a consistent approach to tank container safety;
- b) industry understands what the standards are and the basis for them; and
- c) roles and responsibilities of consignors, loading points, rail and shipping terminals, repair / storage depots, receiving customers and tank container operators are understood (see Appendix A).

The following summary, provided by I T C O, sets out the key elements of the protocol reached with the HSE to enable all relevant parties to play their part in seeking to eliminate the risk of injury from working at height

The Guidance Standard refers to ALL tank container operators who operate throughout Europe and those global operators who may from time to time also bring tank containers into the European market. Where national laws or approved Codes of Practice (COP) exist covering industry arrangements, these take precedence over this protocol.

Appendix A – Intermodal Supply Chain activities associated with ISO Tank Containers



BACKGROUND

Whilst I T C O Group Members have experienced a small number of falls from height from ISO tank containers, the hazards associated with potential falls clearly dictate that the need for both appropriate Safety Standards and Risk Management Procedures is a priority issue for all parties in the loading, storage, repair, transportation, and unloading operations as identified above (see Appendix A).

This protocol whilst setting out to eliminate access by design acknowledges that this is a long-term solution and for the interim period to 2013, it sets out the measures that should be taken along with a timetable for doing so.

The requirements and legal obligations for all intermodal supply chain (see diagram Appendix A) parties to conduct risk assessments of their operations, to reduce and/or eliminate risks, to protect employees and related personnel, and to co-operate and co-ordinate their activities are well established within the E U-based legislation.

The protocol arrangements do not replace these obligations or duties. In so far as is reasonably practicable, effective measures should be taken to prevent any person falling a distance likely to cause personal injury.

Within these overall obligations and measures taken to minimise risk, a clear hierarchy of control exists to guide this process:

- To minimise/mitigate the need to access the tops of tank containers e.g. by developing bottom loading at discharge / receivers facilities.
- Where access to the top of tank containers cannot be eliminated, ensure that fixed gantries are provided at loading, storage, repair, depot and discharge facilities incorporating secure all round protection on all sides of the high level working position from which a person could fall.
- In the event that load/deliveries are infrequent to places where fixed loading/unloading is not reasonably practicable and tank container top access cannot be eliminated then PORTABLE GANTRIES should be provided.
- Use of fall arrest and restraint systems should primarily be seen as the last resort or used as an interim solution, pending application of the points above, and only if all of the previous control measures are not reasonably practicable. Where the fall arrest/restraint system is used, rigorous controls and training measures need to be applied to support this method.

(See Appendix B for hierarchy of control)

THE WORKING PROTOCOL

The Protocol seeks to underpin the obligations described above to minimise and mitigate the risks, with a set of practical actions which support the objectives of the I T C O Tank Container Group Members. I T C O with other parties strive to continually improve Safety Standards across the Intermodal supply chain and Tank Container Industry. Importantly, as well as describing the obligations of loading, storage, repair, depot and discharge facilities operations, the protocol provides a timescale plan to improve physical controls applicable to tank container operators.

It must be emphasised that I T C O Tank Container Group members will seek to eliminate the need to access tank tops as the preferred course of action whenever possible. To do this the support and co-operation of loading / delivery operators is critical. With reference to sampling and checking for secure closure of all apertures, this area extends to port and terminal facilities to allow checking of ISO tank container top closures to ensure “fit for purpose” prior to going on a public highway.

SITE OPERATORS

There is a clear duty on the site operator (loading, storage, repair, depot and discharge facilities) to ensure the safety of all personnel operating on their sites and where other parties share the workplace, to co-operate with them to identify, assess and minimise the risks to the health and safety of all personnel. For example, to provide suitable gantries with access stairs and/or other safety equipment.

The assessment of the identifiable risks should be realistic, take account of all tasks, and must seek to prevent persons falling a distance that is likely to cause personal injury,

Given the hierarchy of control measures, the emphasis must be for site operators (loading, storage, repair, depot and discharge sites) to reduce or eliminate the need for high level access during, for example, loading, unloading, dipping and sampling operations.

Where elimination of high level access to the tanker top is not reasonably practicable and the outcome of the risk assessment leads to the level in the hierarchy where a gantry is the appropriate control measure, then the site operator (see above for description) should take responsibility for providing it. To ensure that the fixed gantry is suitable for the range of tank containers using the facility, site operators should co-operate with tank container operators during the design of the fixed gantry.

Health and Safety Regulators will continue to require site operators to provide measures e.g. fixed loading/unloading gantries with integral secure fencing. Where this is not reasonably practicable, other measures could be a suitable overhead beam and harness.

The practice of connecting a harness to a temporary handrail is bad practice and significantly increases the danger when working at height.

TANK EQUIPMENT SPECIFICATION

The specification below is applicable to lessors and operators of ISO tank equipment, including those owned and operated by chemical companies.

Where tank container top access is required outside of a “controlled fenced gantry environment” and considered necessary by risk assessment, the following specification will apply;

- 1) Where the tank container is fitted from new with a permanently installed handrail, the handrail should be a minimum height of 1100mm in the raised position with at least one intermediate rail. [Note that handrails installed on tank containers must provide

effective fall prevention around all sides of the access and work area. Single handrails do not do this and additional measures must be taken to prevent falls.]

- 2) Where the tank container is fitted with a walkway or access platform on top of the tank container, it shall be of adequate dimensions in a single plane and with no tripping hazards, and be constructed of a non slip surface material allowing suitable drainage.

It should be at least 460mm wide with slope <10Dgr and be positioned to give safe access to the manlid and sampling areas. Those ISO tanks that have a small diameter tank and require step down to access such areas shall also have adequate flooring at the lower level.

- 3) Inbuilt ladders on tanks should be constructed with two stiles and should be constructed to a specification of at least 300mm wide with uniform step spacing < 300mm > 280mm, but due consideration should be applied to final tank specification at the dome end for maximum toe clearance possible.

ITCO agreed specification

1	Ladder width 300mm minimum, with UNIFORM width throughout the ladder
2	The ladder should incorporate 2 stiles NOT using the corner post as one and made of rounded rectangular x-section stiles both sides
3	Step height throughout the ladder should be consistent and as close to 300mm as possible taking into account the frame design but no less than 200mm and no more than 400mm
4	Horizontal flat steps, high friction surface, with free water drainage and non slip surface throughout. Bottom step to comply with 3 above, toe clearance to be the maximum possible within the design constraints of the tank container
5	The ladder must be so positioned that direct access to the walkway from the top of the ladder is possible. Minimise obstruction from tank frame
6	Transition handhold to be fitted adjacent to the top of the ladder which allows easier transition from the ladder to tank top and vice versa

NOTE The wide variety of tank container designs mean that alternative tank container top working configurations are possible which provide the same levels of protection as with the above minimum standards. It is acceptable to deploy these where risk assessments clearly demonstrate that at least the same level of protection is afforded and where the following principles apply:

- The access working platform on top of the tank container fully covers the working area so as to minimise slip, trip and falls risks.
- The hierarchy of control is applied to determine the most appropriate system.

Written copies of risk assessments conducted should be made available to those involved in the supply chain.

INTERNATIONAL TANK CONTAINER ORGANISATION (ITCO)

IMPLEMENTATION PLAN

After extensive consultation between the International Tank Container Organisation (I T C O) and the Health and Safety Executive the following actions were agreed to provide a common and consistent industry approach to tank containers where top access will still be required:

- 1) All new tank containers requiring access platforms or walkways will be fitted as the ITCO Tank Equipment Specification - effective new orders July 2006
- 2) Where top access is required outside of a “controlled” fenced gantry environment, tank container operators will ensure that all tank containers that require access platforms and walkways as above will be 100% retrofitted to the Tank Equipment Specification by 31st December 2013 at the latest.
- 3) Tank container operators will ensure that 60% of their fleet that operates within Europe (or occasionally operate in Europe) that require access platforms or walkways will be retrofitted to the Tank Equipment Specification, or the need for tank top access eliminated, by 31 December 2010
- 4) Tank Container Operators described above will put in place a programme for monitoring the implementation of the work needed to achieve these deadlines. This will be documented in writing.

FOOTNOTE

- i Depots, plant, sites, ports and terminals involved in the supply chain are required by E.U legislation at present in force to provide suitable equipment, and ensure they have in place effective measures to prevent a person falling from height during any operations / activities on their site.
- ii All use of PPE, including harnesses, lanyards etc must be made with reference to the relevant European Personal Protective Equipment at Work legislation and relevant guidance documentation.

HIERARCHY OF CONTROL FOR WORKING AT HEIGHT PROTECTION

SCENARIO	CONTROL MEASURE
a) All situations	Consider elimination and reduction of the need for access at height eg bottom loading
b) Where (a) above is not reasonably practicable and where frequent access at height is required at a fixed location, eg: loading, discharging, repair and at port and terminals	Full gantry, with protection on all sides of the working position
c) Where (a) and (b) above are not reasonably practicable and where frequent access at height is required at a fixed installation	Alternatively, portable steps/gantry may be used
<p>d) Where (a), (b) and (c) above are not reasonably practicable and where access at height is required infrequently</p> <p>(this is only likely as a temporary measure and (a), (b) or (c) above should be planned long term)</p>	<p>Fall protection provided for the tank container by the site operator (see below).</p> <p>N B Top walkway with handrail on one side is unlikely to be effective due to different tank top design configurations, at this point consideration shall be given to</p> <p>(a) comprehensive Risk Assessment being conducted; and</p> <p>(b) personnel suitably trained.</p> <p>Control measures might include, for example:</p> <p>overhead beam in place and certificated harness for use</p>
e) All residual cases (ie: one-off cases)	Fall protection or restraint device, all other control measures eg: training, supervision, other hardware issues such as non-slip walkways, portable steps etc

The International Tank Container Organisation is made up of the major industry players. All operate equipment or are involved in the supply chain as seen in Appendix A of this Protocol. The common aim is Safety at all times with any operational movement.

The I T C O Group meets on a regular basis to formulate policy and working practices affecting the whole supply chain and are actively involved in consultations that impact on Government policies and decisions on related industry issues.

For further information on this Protocol contact :-

Willy Freson ITCO Secretary

Freson@itco.be

+32 475 798 194

Graham Wood ITCO Technical Secretary

Grahamwood95@btinternet.com

+44 793 082 8995

APPENDIX B

WORKING AT HEIGHT – SAFETY FLOWCHART

