

**ROAD TRANSPORT EQUIPMENT SPECIFICATIONS:
GUIDELINES FOR STANDARDISATION OF EQUIPMENT**



Responsible Care

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CONTENT

5	1. Standard bulk liquid
5	1.1. General
5	1.2. Equipment
	Tank/Tank container
	Manhole
	Coupling
	Pump/Compressor
	Hoses
	Heating
	Vapour return line
	Pressure line
	Pressure safety devices
	Handrail/Walkway
	Sealing
8	2. Bulk granulate and powders
8	2.1. General
8	2.2. Equipment
	Equipment material
	Gaskets and valves
	Unloading hoses
	Blower
	Filter
	Air lines
	Manhole
	Handrail/Walkway
	Unloading valves
	Coupling
	Sealing
	Certification of equipment
	Intermodal containers
11	3. Packed goods
11	3.1. General
12	3.2. Equipment
	Trailors/Containers
	Loading allowance
	Dimensions



OBJECTIVES

- Standardised equipment will improve the utilization flexibility and the productivity of equipment and thus ensure an **efficient distribution** of chemicals.
- Standard equipment reduces the risks of product spillage and the empty movement of transport units and will thus have a **positive environmental impact**.
- Standardisation of equipment will contribute to the **responsible care** program of the chemical industry and the chemical transport industry.

1. STANDARD BULK LIQUID



1.1. GENERAL

OBJECTIVE

The specifications for transportation equipment for loading at loading points, including shipping points of contracted logistics service suppliers, are standard. This means that all these shipping points will adhere to the specifications described in this document. Any deviation from or exception to these specifications must have a written approval from the shipper's representative.

ROAD/INTERMODAL

The specifications in this section primarily apply to tank trucks and tank containers used in the transport of bulk liquids via road or intermodal transport.

COMPLIANCE

All contracted logistics service suppliers will be held responsible and accountable for presenting their equipment for loading of bulk liquid products in compliance with:

- legal regulations (ADR, and RID, IMDG where this applies)
- national legislation for domestic transportation where this applies,
- international legislation and applicable legislation of the countries of transit
- specifications mentioned in this section.

When applicable, a valid ADR certificate must be present for both tractor, tank and trailer clearly indicating the tank code and vehicle code. In these cases, the driver must also be in possession of a valid professional ADR skill certificate.

“FIT FOR LOADING”

The logistics service supplier is responsible for presenting the equipment fit for loading the bulk liquid products, i.e.:

- in compliance with the specifications in this section
- suitable for the product to be loaded

Equipment thus needs to be inspected by the logistics service supplier, or his authorized agent, prior to arrival at the loading point.

1.2. EQUIPMENT

TANK/TANK CONTAINER

Tank equipment must conform to the following specifications:

- preferably made of stainless steel
- minimum allowable working pressure for:
 - non-dangerous liquids: 1 bar / dangerous liquids: 1,75 bar
- be equipped with a vapor return connection to enable closed discharge and loading
- have properly identified earthing points
- the exterior of the tank should indicate the exact contents in l
- the exterior of the tank should indicate the exact tare mass and maximum allowable gross weight in kg.

In case of multi-compartment tank equipment:

- compartment numbers and exact contents (l) indicated on the exterior of the equipment
- outlet should be numbered in conformity with compartment numbers (NB numbering of the compartments starting from the front)(1=Fwd)
- each compartment must have its dedicated outlet (no manifold).



MANHOLE

The following specifications apply for the manholes:

- manhole gaskets must be made of PTFE or material compatible with the product
- must be located above the center line of the tank and above the highest possible liquid level of the compartment concerned
- minimum diameter 500 mm
- all swing bolts or equivalent fasteners present and in good operating condition
- manhole rims must be clean and free of dents
- manhole covers should open to more than 100 degrees, preferably 120 degrees
- manhole covers must be secured properly when opened less than 120 degrees (securing equipment should be part of the technical outfit of the tank/tankcontainer)
- no obstacles should prevent proper closure of loading cover
- manholes or manlid covers must be sealable
- cleaning hole : minimum diameter of 300mm.

COUPLING

Couplings on tanks for handling of standard bulk chemicals:

Top-loading and -unloading

- flange DN80
- pitchcircle 160 mm (flange PN10)
- holes 4x18 mm
- vapor return - flange DN50
- pitchcircle 125 mm (flange PN10)
- holes 4x18 mm
- ball valve or butterfly valve
- pressure connection
- express coupling DN 40.

Bottom unloading

- 3" coupling with dust cap or French coupling or TW coupling female or DIN 80 flange
(NB: ECTA will support the design of a unique EU coupling in a separate Working Group).

Note: valves on discharge lines with bottom unloading - butterfly valve.

The following specifications apply for couplings:

- must be made of same material as the tank
- blind flange (with chain) must be present
- gaskets and product seals must be made of PTFE or compatible with the product.

Notes:

- all top valves have to be made blind by a cap or flange and equipped with at least one valve
- all bottom valves have to be made blind by a cap or flange and equipped with valve(s) according to the transport codes
- parts which may come in contact with the product must be product compatible.

PUMP/COMPRESSOR

Depending on the requirements by product or customers, the tank must be equipped with a compressor or a pump for discharge. If not otherwise specified, the standard equipment is the truck engine-driven compressor, equipped with the necessary filters to prevent any contamination. A preferred option is the use of a dedicated pump at the unloading location.

Additional specifications:

- all rotating parts of pumps or compressors must have safety protection made from non-sparking material
- the noise level, at a distance of 7.5 meters, under normal operating conditions, should be lower than 75 dB(A) as from 2001.



HOSES

A preferred option is the use of dedicated hoses of the unloading location.

The following specifications apply:

- minimum length is a total of 10 m
- suitable for the product to be discharged
- equipped with dust caps. Visible inspection of hoses while in the hose compartment must be possible
- the hoses applied shall have a rupture pressure of at least three times the maximum pressure,
- the hoses as well as the connections permanently fixed to them (couplings) shall be controlled at least once a year (visual control or test pressure) depending on the regulation
- anti static condition shall be tested
- test reports must be available from the haulier upon request or stamped/marked on the hose itself.

HEATING

Electrical or steam heating permitted.

If heating possibilities are fitted, tanks need to be insulated and equipped with standard external heating coils. Tanks with internal heating coils are not accepted.

Additional specifications:

- maximum operating steam pressure must be indicated on the exterior of the tank or near the steam inlet connection
- the hose connection size for heating should be 1 inch BSP
- for multi-compartment tanks, a temperature indicator is required for each compartment
- temperature indicator must be checked twice a year.

VAPOUR RETURN LINE

If fitted, vapour return line must have following specifications:

- line with diameter DN 50 (2")
- starting near the bottom unloading line (1 comp tank) /in the middle at same height of bottom unloading (multi comp tank)
- fitted with DN 50 female TW coupling
- line going up to the tank
- connection with vapour return on top of tank by means of flexible hose.

PRESSURE LINE

If fitted pressure line must have following specifications:

- line with diameter DN 25 (1")
- starting forward of the tank
- fitted with coupling, manometer, pressure relief valve, anti-return valve
- lining going up to the tank
- connection with pressure connection on top of the tank by means of flexible hose.

PRESSURE SAFETY DEVICES

As required by the actual relevant manufacturer and transport code(s).

HANDRAIL/WALKWAY

All tank/tank containers must be equipped with a handrail for all European traffic.

The following minimum specifications apply:

- the minimum width of the walkway must be 400 mm
- the minimum height of the handrail must be 1000mm along the walkway
- additional protection must exist at 50% of the maximum height
- horizontal tension test of 300 N in all directions
- the handrail can be installed/activated before entering the walkway.

SEALING

Fill opening and valves must be sealable.

