

HARBOUR MASTER'S WRITTEN INSTRUCTIONS, 2007

Issued in terms of the National Ports Act No. 12 of 2005, Section (74)(3)

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HARBOUR MASTER'S WRITTEN INSTRUCTIONS FOR THE HANDLING OF BULK FLAMMABLE LIQUIDS

These written instructions are issued by the Harbour Master in terms of rule 110(1)(a) of the Port Rules, which are issued in terms of section 80(2) of the National Ports Act, and section 74(3) of that Act.

1. Purpose of these instructions

The purpose of these written instructions is to ensure safety, security, efficiency, good order and the protection of the environment.

2. Application of these instructions

In addition to the Port Rules, these written instructions apply at a port to *tankers* that are conveying, discharging or shipping *flammable liquids* in bulk or during bunkering operations.

3. Interpretation

- (1) In these instructions, unless the context indicates otherwise —
- (a) "*cargo deck*" means the deck of the *tanker* on which openings to oil are situated;
 - (b) "*certified chemist*" means a person who holds a B. Sc degree in chemistry or a recognised equivalent certificate, or who has successfully completed a specialised course in Chemical Tanker or Oil Tanker Safety Training Program in accordance with the South African Code of Maritime Qualifications published by *SAMSA*, and who has at least two years laboratory experience and specialised training in the testing of atmospheres in vessels;
 - (c) "*flammable liquids*" means a liquid, or mixture of liquids, or liquids containing solids in solution or suspension (except substances otherwise classified on account of their dangerous characteristics), which give off a flammable vapour at or below 61 degrees Celsius closed-cup test (corresponding to 65.6 degrees Celsius open-cup test), normally referred to as the "flashpoint". This includes liquids offered for transport at temperatures at or above their flashpoint, and, substances transported or offered for transport at elevated temperatures in a liquid state, which give off a flammable vapour at temperatures equal to or below the maximum transport temperature;
 - (d) "*flammable liquid in bulk*" means any flammable liquid conveyed otherwise than in containers;
 - (e) "*flash point*" means the lowest temperature at which the application of a flame causes the vapour above a liquid to ignite when the product is heated under prescribed conditions, in a closed container;
 - (f) "*gas free*" means that the tank, compartment or container has sufficient fresh air introduced into it in order to lower the level of any flammable, toxic or inert gas to that required for any purpose;
 - (g) "*industry guidelines*" means the industry reference works referred to in rule 41(1), as amended from time to time.

- (h) "**Prohibited area**" means any area declared as a *prohibited area* by the Authority and includes the entire water surface within 30 metres of the *tanker*;
- (i) "**tank**" means any hold, tank, compartment, pipeline (whether ashore or afloat), or any enclosed place, which contains or has contained any *flammable liquid in bulk*, or any sludge, deposit or residue from the flammable liquid or bulk;
- (j) "**Tanker**" means a vessel designed to carry liquid cargo in bulk, including a combination carrier being used for this purpose.
- (k) "**Vapour pressure**" means the absolute pressure of a liquid exerted by the gas produced by evaporation from the liquid when gas and liquid are in equilibrium at the prevailing temperature and the gas or liquid ratio is effectively zero.

4. Industry guidelines

- (1) All persons involved in the handling of bulk flammable liquids must comply with the standards, procedures, practices and requirements set out in the *industry guidelines*, as amended from time to time, including:
 - (a) The International Safety Guide for Oil Tankers and Terminals (presently in its fifth edition);
 - (b) Marine Terminals Baseline Criteria and Assessment Questionnaire;
 - (c) Liquefied Gas Handling Principles on Ships and in Terminals;
 - (d) Ship/Shore Interface Safe Working Practice for LPG and Liquefied Chemical Gas Cargoes;
 - (e) Guidelines for the Handling, Storage, Inspection and testing of Hoses in the Field;
 - (f) Chemical carriers entered into the CDI Scheme.
- (2) The Harbour Master may permit a vessel to follow a procedure or practice other than those required by the *industry guidelines* or these written instructions, if he or she is satisfied that the other procedure or practice is as safe as that required by the *industry guideline* or these written instructions and it is in the interests of security, good order, protection of the environment and the effective and efficient working of the port.
- (3) Contravention of a procedure or practice substituted pursuant to sub-rule (2) is deemed to constitute a contravention of the practice or procedure required by the *industry guidelines* or these written instructions.

5. Safety measures on berthing

- (4) The terminal operator in a port must on berthing cause a telephone and a VHF radio communication link to be established with port control.
- (5) A *tanker* must not lie within 30 meters of any other vessel except by express direction of the Harbour Master, but in case of transshipment this sub-rule may be departed from on the written authority of the Harbour Master.

6. *Tanker* moorings

- (1) All *tanker* moorings must be capable of being readily cut or slipped from both the *tanker* and the shore in case there is an emergency.
- (2) Wire towing pendants must be rigged at all times while the *tanker* is in a port.
- (3) Wire towing pendants must be made fast to bitts and ranged out through bow and stern on a *tanker's* offshore side so that it is convenient to tugs.
- (4) If insulation is required between the *tanker* and pipelines, all moorings must be insulated with fibre tails for a distance of at least two metres. The fibre tails must be at least 25% stronger than the wire ropes to which they are attached.

7. Safety measures after berthing

- (1) The main engines, steering engine, or deck machinery of a *tanker* may not be immobilised, except with the permission of the Harbour Master.
- (2) A *tanker* must be sufficiently manned for the purposes of dealing with any situation that may detrimentally affect the safety, security, good order and the protection of the environment.
- (3) The terminal operator must ensure that fire-fighting personnel are in attendance at all times when a *tanker* is berthed in the port and is —
 - (a) loaded with flammable liquid having a flashpoint of less than 61 degrees Celsius; and
 - (b) in ballast, but is not gas-free.
- (4) The Harbour Master may order the removal of a *tanker* that has *flammable liquids* on board from the berth at which it is lying, if the Harbour Master is of the opinion that this is in the interests of safety.

8. Hoses

- (1) The hoses that are used must be sufficiently flexible to allow for any movement of the *tanker* whilst moored.
- (2) All connections must be properly and tightly made, with oil-tight gaskets and every bolthole in the flange being securely fastened.
- (3) In the event of any section of flexible hose showing signs of bulging or of percolation, the section in question must be replaced immediately.
- (4) The flexible hose must be supported and raised above the deck wharf level.
- (5) Drip pans must be placed under each joint where practicable and the flexible hose and drip pans must be kept under constant supervision at all times while pumping is in progress.

9. Safety measures during handling of cargo

- (1) No loading or discharge of *flammable liquids* after sunset may take place unless deck lighting is provided to the satisfaction of the Harbour Master.
- (2) Before any cargo handling operations commence, the master must —
 - (a) ensure that all scuppers are plugged effectively; and
 - (b) all sea valves and overboard discharges in the pump rooms and cofferdams are securely closed and remain closed and lashed during discharging or shipping operations.
- (3) A *tanker's* manifold valves and shore pipeline valves must be kept closed until —
 - (a) a hose connection has been made;
 - (b) the vessel's cargo valves have been set and outlet valves checked; and
 - (c) safety precautions have been complied with.
- (4) As soon as pumping has commenced and when full pressure has been reached, the *tanker's* officer on duty and the terminal operator must ensure that no oil or ballast is discharged into sea or onto the quayside.
- (5) In order to minimize the risk of spills, the pressure during pumping must be increased gradually and all flexible pipe joints must be carefully examined during this period.
- (6) The terminal operator must secure the *tank* immediately after all *flammable liquids* have been removed from that *tank*.
- (7) The lid of any tank may only be opened after it has been established that the *tank* is *gas-free*.

10. Conditions when pumping or ballasting may be stopped

- (1) The Harbour Master may order that pumping of *flammable liquids* or ballasting be stopped if —
 - (a) There is spillage of flammable liquid beyond a minor drip leakage;
 - (b) Anything occurs that necessitates repair to the plant, pipes, pumps or connections;
 - (c) If there is a failure of lighting either on the *cargo deck* or on the wharf;
 - (d) An electric storm is approaching and during that storm;
 - (e) If there is any undue concentration of vapor being detected in the accommodation, engine room or pump room; or

- (f) Anything occurs or any condition is observed, which in the opinion of the Harbour Master, may not be conducive to the safe working of the *tanker* or may endanger the *tanker*, wharf or be threat to safety, security or protection of the environment.
- (2) If the Harbour Master orders that pumping be stopped, then pumping may only be resumed with the Harbour Master's permission and in accordance with the Harbour Master's safety precautions and directives.

11. Safety measures for the handling of stores and equipment

- (1) The handling of the stores and equipment of a *tanker* must be completed before any *tank* on the *tanker* is opened for any purpose whatsoever.
- (2) Stores for consumption on the voyage may be loaded during cargo handling operations only if they carried on board by hand or are placed aboard on the after-deck away from the discharge and the loading manifolds.

12. Repairs

- (1) A *tanker* that is conveying or has conveyed *flammable liquids* may not enter a repair quay unless it is certified *gas free* by a *certified chemist*.
- (2) A *tanker* that is conveying or has conveyed *flammable liquids* may not carry out any repairs while it is in a port, unless –
 - (a) a gas-free certificate for the vessel has been issued or all the tanks are inert;
 - (b) the Harbour Master has permitted the repairs; and
 - (c) the vessel abides by the Harbour Master's conditions that are determined in the interests of maintaining safety, security, good order and the protection of the environment.
- (3) The Harbour Master may direct that –
 - (a) a fresh gas-free certificate issued by a *certified chemist* be obtained daily before work is commenced or at any time if, in the opinion of the Harbour Master, this is in the interests of safety;
 - (b) work be suspended until a further gas-free certificate is obtained, if, during the course of the work, the Harbour Master is of the opinion that there is any risk of flammable vapour or a threat to safety.
- (4) The Harbour Master may permit minor repairs to be carried out on board a *tanker*, but may specify conditions for that work in the interests of safety, security, good order and the protection of the environment, including the following:
 - (a) a gas-free certificate must be obtained daily in respect of the tank, compartment or hold where the minor repairs are to be carried out and for each adjoining tank, compartment or hold.

- (b) a sign must be prominently displayed on each tank hatch on the *cargo deck* indicating the condition of that tank, namely "danger" or "gas-free", as the case may be.
 - (c) similar signs must be displayed at the entrance to any hold or compartment affected.
 - (d) "Danger" signs must have white letters on a red background.
 - (e) "Gas-free" signs must have black letters on a white background.
 - (f) any electrical equipment required to carry out repairs may be examined and approved by the Harbour Master, if the Harbour Master so directs.
- (5) Despite the provisions of this rule, repairs, other than minor routine maintenance, may be carried out in the engine room of a *tanker* if the Harbour Master has approved the repairs.
- (6) If a *tanker* is not gas-free, the Harbour Master may permit immobilisation at a berth outside the security area designated by the Harbour Master, but;
- (a) only before breaking cargo or after completion of discharging or ballasting; and
 - (b) when all openings, except the gas-line vent, are closed.
- (7) Until a *tank*, compartment or hold has been certified gas-free, no person may —
- (a) take into or within close proximity of the *tank*, compartment or hold anything that could cause ignition; or
 - (b) enter the *tank*, compartment or hold, unless the person is —
 - (i) provided with a suitable self-contained breathing apparatus consisting of a helmet or face-piece that has the necessary connections for the person to breath outside air;
 - (ii) wearing a safety belt connected to a lifeline that is tended by two persons; and
 - (iii) kept in sight at all times by one of the attending persons.
- (8) No portable electronic device or any device that is capable of emitting or causing a spark that has not been certified intrinsically safe by a recognized testing authority may be used in any *prohibited area*.
- (9) No person may enter, remain in or leave a *prohibited area* at a *tanker* berth without a permit issued by the Harbour Master.
- (10) When cargo is being handled or ballast taken on board, all *cargo deck* doors and ports as well as all upper deck doors facing the *cargo deck* must be kept closed. These doors may only be opened for the purpose of entry and exit where this is essential to the working of the *tanker*.

13. General safety measures

- (1) A *tanker* within the port's limits may only open a *tank* after the *tanker* is either berthed or is at anchor for safety purposes.
- (2) During loading or ballasting of *tankers* excluding chemical parcel *tankers* operations the gases displaced must, as far as possible, be vented up the mast or wherever the extremity of the gas line is placed.
- (3) *Flammable liquids* in bulk may be handled only at the places provided for that purpose at the port and as directed by the Harbour Master.
- (4) No flammable liquid of any description and no water that is contaminated with oil or flammable liquid may be discharged, or allowed to escape, into a port.
- (5) The master of a *tanker* may not discharge clean ballast into a port before back loading without the permission of the Harbour Master.
- (6) No work of any description that might cause a fire may be performed on a *tanker* or within a *prohibited area* except with the permission of the Harbour Master.

HARBOUR MASTER'S WRITTEN INSTRUCTIONS FOR THE HANDLING OF FLAMMABLE LIQUID CONTAINERS

These written instructions are issued by the Harbour Master in terms of rule 110(1)(b) the Port Rules, which are issued in terms of section 80(2) of the National Ports Act, and section 74(3) of that Act.

1. Purpose of these instructions

The purpose of these written instructions is to ensure safety, security, efficiency, good order and the protection of the environment.

2. Application of these instructions

In addition to the Port Rules, these written instructions apply at a port to vessels conveying, shipping or discharging containers that hold or held *flammable liquids*.

3. Interpretation

(1) For the purposes of these instructions —

- (a) "***Certified chemist***" means a person who holds a B. Sc degree in chemistry or a recognised equivalent certificate, or who has successfully completed a specialised course in Chemical Tanker or Oil Tanker Safety Training Program in accordance with the South African Code of Maritime Qualifications published by *SAMSA*, and who has at least two years laboratory experience and specialised training in the testing of atmospheres in vessels;
- (b) "***Empty container***" means a container that has contained flammable liquid having a *flash point* not exceeding 61 degrees Celsius;
- (c) "***Flammable liquids***" means a liquid, or mixture of liquids, or liquids containing solids in solution or suspension (except substances otherwise classified on account of their dangerous characteristics), which give off a flammable vapour at or below 61 degrees Celsius closed-cup test (corresponding to 65.6 degrees Celsius open-cup test), normally referred to as the "flashpoint". This includes liquids offered for transport at temperatures at or above their flashpoint, and, substances transported or offered for transport at elevated temperatures in a liquid state, which give off a flammable vapour at temperatures equal to or below the maximum transport temperature;
- (d) "***Flash point***" means the lowest temperature at which the application of a flame causes the vapour above a liquid to ignite when the product is heated under prescribed conditions, in a closed container;
- (e) "***Gas free***" means that the tank, compartment or container has sufficient fresh air introduced into it in order to lower the level of any flammable, toxic or inert gas to that required for any purpose;

- (f) "**Prohibited area**" means that area on the wharf adjacent to the vessel conveying, discharging, or shipping *flammable liquids* in containers, demarcated as a *prohibited area* by means of a fence or barricade or ropes and notice boards.

4. Notices of prohibited areas

During shipping and discharging operations of containers carrying or having carried *flammable liquids*, the Harbour Master may require that the wharf area be barricaded off and one or more notice boards bearing the words "**NO SMOKING**" and "**PROHIBITED AREA**" be displayed conspicuously.

5. Loading and discharging of flammable liquid containers

- (1) Containers with *flammable liquids* and *empty containers* that had *flammable liquids* in them must be discharged directly into trucks or semi-trailers or loaded directly from trucks and semi-trailers into the vessel.
- (2) Despite sub-rule (1), if the Harbour Master is of the opinion that this is not practicable, the containers may be stacked in an open space that has been demarcated for this purpose.
- (3) A flammable gas intensity detector must be provided by the vessel and retained in the custody of a fire fighter contracted by the vessel, who must, before the handling of cargo and at half-hourly intervals during handling, conduct tests in the hold of the vessel to establish whether any dangerous concentration of gas exists.
- (4) In the event of a dangerous concentration of gas being detected —
 - (a) all operations must cease and the hold must be evacuated and ventilated; and
 - (b) normal operations may not be recommenced without the hold being certified *gas-free*.
- (5) Flammable liquid containers and *empty containers* that had flammable liquid in them may not be handled during electrical storms.
- (6) *Flammable liquids* in containers may not be discharged or shipped unless the containers are certified ISO containers.
- (7) Damaged containers may only be discharged with the approval of the Harbour Master and subject to the conditions that he or she may impose in the interests of safety, security, good order and the protection of the environment.
- (8) No quantity of *flammable liquids* in excess of 25 kilolitres may be stacked within a port except with the permission of the Harbour Master and subject to the conditions that he or she may impose in the interests of safety, security, good order and the protection of the environment.
- (9) No repair work within the hold, or on adjacent decks, or within adjacent compartments, may be carried out except with the permission of the Harbour Master and subject to the conditions that he or she may impose in the interests of safety, security, good order and the protection of the environment.

6. Stowing of flammable liquids

- (1) When *flammable liquids* in transit are stowed in a hold that is not opened or stowed on deck, precautionary measures must be taken as may be required by the Harbour Master in the interests of safety, security, good order and the protection of the environment.

- (2) If *flammable liquids* in transit are stowed in a hold which is being worked for other cargo, no person may smoke or carry out any repair work in that hold, and sufficient fire fighters, equipped with a flammable gas-intensity gas detector, must be in attendance while the hold is being worked.