

CARRIAGE OF OILS AND FATS

A number of topics have passed through the committee stages that have led to changes to carriage conditions, now endorsed by Council, and coming into effect on 1 April 2016.

Banned List

As notified in the Circular dated 31 December 2015, Used Cooking Oil and Used Cooking Oil Methyl Ester is to be added to the FOSFA List of Banned Immediate Previous Cargoes. The revised list, dated 1 April 2016, is attached.

Zinc Silicate Tank Coatings

To provide greater clarity as to acid value in relation to the suitability of zinc silicate coatings and vegetable oil carriage, on the Technical Committee's recommendation to Council, the more widely understood (in the trade) FFAs have been included in the Qualification 2.2.1 of the FOSFA Qualification and Operational Procedures for Ships engaged in the Carriage of Oils and Fats in Bulk for Edible and Oleochemical Use. Updated Qualifications and Operational Procedures, with an effective date of 1 April 2016, are attached, reflecting this amendment.

Pressure Testing by Superintendents of Tank Coils/Heat Exchangers

The FOSFA Certificate of Compliance, Cleanliness and Suitability of Ship's Tank and the Code of Practice for Member Superintendents currently dictate a witnessing of pressure testing and reporting. Increasingly, on safety grounds and modern operational practices on vessels, the witnessing event is not actually undertaken, so the emphasis has been changed on the Certificate and in the Code of Practice to that of a reporting activity. The Combined Masters Certificate does of course also provide a statement as to testing of coils/exchangers, so should provide collaborating evidence/facts.

A separate circular has been provided to Superintendent Members with notice of the small change to Part 1, Page 1-7 at 5.3, Ship's Tank - Heating Coils, and will be available to the wider membership via the website on publication of an updated Code of Practice on 1 April 2016. The revised Certificate, with the same active date of 1 April 2016, is attached.

The Qualifications, the Banned List and the Certificate should be placed in the Carriage of Oils and Fats publication, replacing the existing versions at Pages A-1 to A-4, B-1/B-2, E-1/E2. They replace those dated 1 January 2010, 1 January 2008 and 1 September 2011 respectively. The publications on the website will be updated on their effective date in the usual way.



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**FOSFA QUALIFICATIONS AND OPERATIONAL PROCEDURES FOR SHIPS
ENGAGED IN THE CARRIAGE OF OILS AND FATS IN BULK FOR
EDIBLE AND OLEO-CHEMICAL USE**

A. FOSFA QUALIFICATIONS

1. Classification

1.1 Ships shall be fully classed by a classification society in membership of the International Association of Classification Societies.

2. Cargo Tanks and Cargo Handling Facilities

2.1 Copper and its alloys such as brass, bronze or gun metal shall not be used for any part of the system installation and means of transport that has contact with the oils or fats.

2.2 Tanks

2.2.1 Tanks, other than those of stainless steel, shall be coated, with the exception of mild steel tanks as specified in the FOSFA Operational Procedures. Only coatings suitable for food grade products and for the carriage of the oils or fats shall be used. Zinc silicate coated tanks shall not be used for oils unless the acid value is 1 (milligram KOH per gram oil) or under, or, in equivalent terms, unless the FFA is 0.5% for oleic acid, 0.46% for palmitic acid and 0.36% for lauric acid, or under.

2.2.2 No closed blisters or loose splits shall be allowed in a coated tank. If after initial cleaning any blisters or loose splits are present they shall be opened by the ships staff to determine whether any cargo residue remains behind. If residue found, tank to be recleaned.

2.2.3 Mild steel exposure in coated tanks to be minimal with no loose scale.

2.2.4 Ships tanks which have been newly coated or fully re-coated, or stainless steel tanks that have been cleaned and passivated under the supervision of a qualified independent surveyor in a drydock/shipyard/repair facility where the ship must have spent a minimum period of 7 consecutive days, shall be considered as new buildings. Cargoes carried prior to the date of such coating or passivation shall not be considered as relevant. The shipowner is required to provide the independent certification of such procedures and to declare the three previous cargoes carried.

2.3 Heating Systems

2.3.1 Heating coils within tanks, and tubes and internal shell of heat exchangers shall be of stainless steel construction only.

2.3.2 Heat transfer medium shall be fully described on the FOSFA Combined Masters Certificate.

2.4 Cargo Handling Facilities

2.4.1 Cargo lines shall preferably be of stainless steel construction with sufficient drain valves.

2.4.2 All valves which may come into contact with oils or fats shall preferably be of stainless steel construction.

2.4.3 Tank access/cleaning hatches to be staunch and tight with suitable packing and gaskets compatible with the cargo.

2.4.4 All internal structural members in tanks to be self-draining.

B. FOSFA OPERATIONAL PROCEDURES

1. Compliance of Vessel Receiving Cargo

1.1 Ship shall comply with the requirements of the FOSFA Qualifications for ships engaged in the carriage of oils and fats, in bulk.

1.2 Ship shall comply with the provisions of the FOSFA Operational Procedures for ships engaged in the carriage of oils and fats, in bulk as applicable to the cargo and voyage designated in these Operational Procedures, including:

- a. Certification in the form of a FOSFA Certificate of Compliance, Cleanliness and Suitability of Ship's Tank issued by a FOSFA Member Superintendent.
- b. Certification in the form of a FOSFA Combined Masters Certificate signed by the Captain/First Officer or an equivalent statement signed by the ship's owners or authorised agent, applicable before any loading or cargo transfer.

2. Tank/Cargo History

Previous Cargoes by Vessel and Voyage Type

2.1 Ocean carriers: the immediate previous cargo in the tank shall not have been a product appearing on the FOSFA List of Banned Immediate Previous Cargoes or shall have been a product appearing on the FOSFA List of Acceptable Previous Cargoes (whichever is appropriate) currently in force at the date of Bill of Lading.

2.2 Transshipment vessels receiving cargo for carriage to or from the ocean carrier: the previous three cargoes in the tank shall have been products appearing on the FOSFA List of Acceptable Previous Cargoes except that in segregated stainless steel tanks, lines and pumps the immediate previous cargo for such tanks, lines and pumps shall be on the FOSFA List of Acceptable Previous Cargoes, currently in force at the date of the Bill of Lading, with the additional exception that transshipment vessels may have mild steel tanks provided the previous three cargoes have been oils and fats for edible and oleo-chemical use and/or molasses.

Note: Transshipment in this context is the physical transfer of oils and fats whether by direct bord-a-bord transfer or via a direct shore pipeline, from one ship to another for the purpose of pre-carrying to the ocean carrier at load-port or on-carrying from the ocean carrier at a customary transshipment port in the area of destination under a through Bill of Lading.

2.3 Short sea voyage vessels (which are vessels used to carry oils and fats for edible and oleo-chemical use for further processing from load port to final destination, provided the distance does not exceed 2,000 nautical miles): vessels with mild steel tanks shall be allowed provided the three previous cargoes have been oils and fats for edible and oleo-chemical use and/or molasses.

2.4 In all cases the immediate previous cargo shall have been not less than 60 percent by volume of the tank and shall have been loaded into that tank either from a shore facility or from road car/rail car, a barge/coaster/transshipment vessel.

- 2.5 a. Where the second last cargo is on the Banned List, the pumping of a product not on the Banned List from one tank to another during the voyage will not render the tank as acceptable.
- 2.5 b. Where the second last cargo is not on the Acceptable List, the pumping of an acceptable immediate previous cargo from one tank to another during the voyage will not render the tank as acceptable.
- 2.6 The Restrictions relating to previous cargoes beyond the Immediate Previous Cargo, as set out in the FOSFA List of Banned Immediate Previous Cargoes and the FOSFA List of Acceptable Previous Cargoes, shall apply.

3. Inspection and Certification

- 3.1 Prior to receiving cargo ship's tanks and related cargo handling systems should be fully inspected for cleanliness by a FOSFA Member Superintendent in accordance with the FOSFA Code of Practice for Member Superintendents, Part One. Inspections shall be certified in the FOSFA Certificate of Compliance, Cleanliness and Suitability of Ship's Tank.
- 3.2 Before any loading of, or transshipment to the ocean carrier, a statement in the form of the FOSFA Combined Masters Certificate shall be handed to the sellers/shippers or their superintendent.
- 3.3 In the case of transshipment from the ocean carrier, a statement in the form of the FOSFA Combined Masters Certificate shall be handed to the Bill of Lading holders or receivers or their superintendents, before commencement of discharge at the port of final destination.
- 3.4 In the event transshipment is arranged where no superintendent is present, a statement in the form of the FOSFA Combined Masters Certificate, or an equivalent statement, together with a certificate of cleanliness of ship's tank and related cargo handling systems signed by the Captain/First Officer shall be handed to the Bill of Lading holders or receivers or their superintendents, before commencement of discharge at the port of final destination.
- 3.5 Transshipment shall only be allowed under a through Bill of Lading and shall be restricted to the area of origin and/or customary transshipment ports in the area of destination, provided that the transshipment at origin is completed within the original contract shipment period and/or agreed extension period, except where transshipment takes place to protect the Master's rights and the ship's obligations under Maritime Law.

4. Cargo Heating Instructions

In the absence of heating instructions from charterers, the FOSFA Heating Instructions (A5 - A8) or the relevant PORAM Heating Instructions, whichever are applicable, shall be followed and the temperature of the oil or fat shall be recorded daily. If required by receivers, a chart signed by the Master or authorised agent shall be provided.

5. Operational Practices

- 5.1 Physical operations at loading and discharging shall be conducted in accordance with the FOSFA Code of Practice for Member Superintendents, Part One.

- 5.2 Two samples shall be taken at the commencement of loading at origin -
- a. a line sample at the deck of each cargo loaded; and
 - b. a first one-foot sample for each ship's tank loaded.
- 5.3 If cargo was loaded through shore hose directly into ship's tank/s (bypassing ship's lines), the receivers at the discharge port to supply suitable pre-pumping containers. Ship shall pre-pump ashore to ensure cargo lines are free of contamination. Pre-pumping shall only be required when there is concern as to the immediate previous cargo. All pre-pumping time to count as used laytime.
- 5.4 The lines and pumps system/s serving the oils and fats tank/s shall be dedicated to oils and fats during the entire voyage. Oils and fats systems shall not be cross connected to any other cargo system to ensure complete segregation.
- 5.5 Pumping from one tank to another on the same ship is not permitted except for the requirements of safety, cargo worthiness and seaworthiness. Where pumping from one tank to another takes place, the Master shall provide a statement certifying the cleanliness of the ship's tank/s and related handling system and the three previous cargoes in the tank/s to which the oil or fat is transferred and confirm the percentage by volume of the immediate previous cargo in the tank/s and the reasons for the transfer, signed by himself or authorised agent, to the Bill/s of Lading holders and/or receivers or their superintendents at the port of destination before commencement of discharge.
- 5.6 Prior to discharge all additional handling systems such as hoses and deck manifolds shall be inspected for cleanliness by a FOSFA Member Superintendent. At the commencement of discharge, line samples shall be taken at the ship's permanent connection for each cargo unloaded. Samples to be inspected for appearance and odour.

FOSFA LIST OF BANNED IMMEDIATE PREVIOUS CARGOES
(giving synonyms and alternative chemical names)

Acetone cyanohydrin (ACH; alpha-hydroxyisobutyronitrile; 2-methylactonitrile)
 Acrylic acid (acroleic acid; propenoic acid)
 Acrylonitrile (ACN; 2-propenenitrile; vinyl cyanide)
 Adiponitrile (1,4-dicyanobutane)
 Aniline (phenylamine; aminobenzene)
 n-Butylacrylate
 tert-Butylacrylate
 Carbon tetrachloride (CTC; tetrachloromethane; perchloromethane)
 Cardura E (tradename for a glycidyl esters of versatic 911 acid)
 Cashew nut shell oil (CNSL; cashew nut shell liquid)
 Crude mineral oil
 Dibutylamine
 Diethanolamine (DEA; di(2-hydroxyethyl)-amine)
 Diethylenetriamine
 Di-isopropylamine
 Dipropylamine
 m-Divinylbenzene (DVB; vinylstyrene)
 Epichlorohydrin (EPI; Chloropropylene oxide)
 Epoxy resins (uncured)
 Ethyl acrylate
 *Ethylene dichloride (EDC; 1,2-dichloroethane)
 2-Ethylhexyl acrylate
 Ethanolamine (MEA; monoethanolamine; colamine; 2-aminoethanol; 2-hydroxyethylamine)
 Ethylenediamine (1,2-diaminoethane)
 Furfuryl alcohol (furyl carbinol)
 Glutaraldehyde
 Heavy mineral oil – oils other than crude oils having either a density at 15 °C higher than 950 kg/m³ or a kinematic viscosity at 50 °C higher than 180 mm²/s, with the exception of lubricating oil without additives (base oil)
 Hexamethylenediamine (1,6-diaminohexane; 1,6-hexanediamine)
 Isocyanates
 These include:
 Toluene di-isocyanate (TDI)
 Polyphenyl polymethylene isocyanate (PAPI)
 Di-phenyl methane di-isocyanate (MDI)
 Methyl isocyanate
 Lube oil additives
 Methyl acrylate
 Methyl methacrylate monomer
 Methyl styrene monomer (vinyl toluene)
 alpha-Methyl styrene monomer (AMS)
 para-Methyl styrene monomer (PMS)

Morpholine (tetrahydro-1,4-oxazine)
Morpholine ethanol (n-hydroxyethylmorpholine)
Perchloroethylene (PCE; perc; tetrachloroethylene)
Phthalates

These include:

Di-allyl phthalate (DAP)
Di-iso decyl phthalate (DIDP)
Di-iso nonyl phthalate (DINP)
Di-iso octyl phthalate (DIOP)
Di-octyl phthalate (DOP)

n-Propylamine

Propylene oxide (Methyl oxirane; 1,2-epoxypropane)

Pyridine

*Styrene monomer (vinylbenzene; phenylethylene; cinnamene)

Tall oil (tallol; liquid rosin)

Tall oil fatty acid equivalent to ASTM type III

Transformer oils of PCB type

Used Cooking Oil (UCO)

Used Cooking Oil Methyl Esters (UCOME)

Vinyl acetate monomer (VAM)

Vinyl chloride monomer (VC; chloroethane; chloroethylene)

Restrictions beyond the Immediate Previous Cargo

Leaded products shall not be carried as the three previous cargoes.

* Ethylene Dichloride and Styrene Monomer shall not be carried as the three previous cargoes in organic coated tanks, or as the last cargo in stainless steel and inorganic coated tanks.

**FOSFA CERTIFICATE OF COMPLIANCE, CLEANLINESS
AND SUITABILITY OF SHIP'S TANK**

Ship Ship's Tank

Owner Operator

Inspected for cleanliness at port Berth

on (Date) At (Time) hours.

1. We have sighted a statement in the form of the FOSFA Combined Master's Certificate signed by the *Captain/First Officer or an equivalent statement signed by the *ship's owners/authorised agent certifying that the above named ship complies with the FOSFA Qualifications and Operational Procedures.

2. Prior to inspection we were informed by ship's *Captain/First Officer that the tank was -

- * Stainless steel
- * Mild steel coated with (description of coating)
- * Mild steel

3. We received a copy of a statement signed by ship's captain, owners or authorised agent certifying that:

*a. The immediate previous cargo in the tank was not a substance appearing on the FOSFA List of Banned Immediate Previous Cargoes in force at the date of the Bill/s of Lading and the tank complies with the Restrictions beyond the Immediate Previous Cargo as set out in the FOSFA List of Banned Immediate Previous Cargoes. The three previous cargoes carried are stated to have been:

Last Cargo

Second Last Cargo

Third Last Cargo

*b. The immediate previous cargo in the tank was a substance on the FOSFA List of Acceptable Previous Cargoes in force at the date of the Bill/s of Lading and the tank complies with the Restrictions beyond the Immediate Previous Cargo as set out in the FOSFA List of Acceptable Previous Cargoes. The three previous cargoes carried are stated to have been:

Last Cargo

Second Last Cargo

Third Last Cargo

*c. Applicable to mild steel tanks only - The three previous cargoes were oils and fats for edible and oleo-chemical use and /or molasses and were stated to have been:

Last Cargo

Second Last Cargo

Third Last Cargo

4. We sighted ship's log which confirmed the above information as to the last three cargoes and the percentage of the immediate previous cargo in the tank, which was not less than 60 percent by volume of the tank.
5. We were informed by ship's that the tank had been cleaned after the last cargo by using the following cleaning procedure:
.....
6. Tank was examined internally for cleanliness and as far as could be seen was found to be clean and dry and free from harmful material and, in our opinion, in this respect based on our visual inspection and at the time of our inspection, was in a fit state to receive a cargo of in bulk.
7. From our inspection we found the tank construction was:
 - *a. Stainless Steel
 - *b. Mild steel coated and as far as could be seen the coating appeared to be in sound condition with minimal mild steel exposure, without loose scale or closed blisters.
 - *c. Mild steel and as far as could be seen appeared to be in sound condition without loose scale.
8. Ship's cargo pumps and fixed pipelines were inspected as far as possible in-situ and based on visual inspection found to be clean and dry with no significant odour.
9. We were informed by the ship's that the tank coils and/or heat exchangers were tested on(date) by an application of *live steam/hot water to not less than kPabar for a period of and were found tight.
10. As far as could be seen from our visual inspection, the hatch covers and jointing appeared to be in sound condition, the seals and packing did not appear to contain copper or copper alloy and there was no copper or copper alloy in the pipelines, pumping system or tank internal fittings where they were in contact with the cargo.

Issued by: (FOSFA Member Superintendent)

Signed:

Inspection completed at hours on (Date)

NB ONE REPORT PER TANK TO BE COMPLETED.

*Delete which is inapplicable