



2025

Guidelines for Effective Tank Cleaning

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CHAPTER 1 GENERAL

Section 1 Application

101. Application

At the request of the owner, the requirements in this Chapter apply to tank cleaning system installed on the oil tanker and chemical tanker. "Tankers" referred in this Chapter are oil tankers and chemical tanks.

Section 2 Class Notations

202. Class notations

The class notation ETC (Effective Tank Cleaning) may be assigned to vessels that comply with the requirements of this guideline, upon the shipowner's request. The following notations may be assigned individually or in combination:

1. **ETC(1)** : Tank cleaning installation requiring a standard tank cleaning coverage aligned with the COW specification for the vertical sides.
2. **ETC(2)** : Efficient tank cleaning requiring a higher standard of tank cleaning coverage.
3. **ETC(except slop tanks)** : For vessels where slop tanks do not meet the requirements, the class notation ETC may still be assigned.
4. Combination of Class Notations:

If both ETC(1) and except slop tanks apply, "ETC(1, except slop tanks)".

If both ETC(2) and except slop tanks apply, "ETC(2, except slop tanks)".

Section 3 Requirements

301. General Requirements

1. Small brackets in way of cross joint of longitudinal and transverse stool top and bottom plate and end of stool, top or bottom plate required from a strength point of view may be accepted. The size of bracket shall be evaluated based on detailed direct analysis. Such brackets shall be designed to be as small as possible. Any shadow area created by such structures shall be included in the shadow area calculations and arrangements for portable washing without tank entry, see 3.
2. For chemical carriers, any horizontal surface where cargo may accumulate, shall be inclined or otherwise arranged for self-drainage under normal conditions of trim and heel (including aft trim). This applies to small brackets as indicated above, as well as any other horizontal surface other than tank top such as the top of transverse lower stools. Alternatively the volume, which can accumulate, shall be included in the stripping result as required by MARPOL Annex II. The maximum allowable volume of cargo that may be accumulated in tanks and associated piping is 75 litres.
3. For calculation of coverage, shadow areas shall include areas where the angle between jet and tank surface is less than 10 degrees, and shadow from cargo pump stacks.
4. Heating coils, vertical droplines, ladders and platform of grating type shall not be included in the shadow areas.
5. Areas where the angle between jet and tank surface is less than 10 degrees, shall be considered as shadow areas. The shadow diagram calculation as per Table 1 shall reflect the identified shadow area when considering the permanently installed tank cleaning machine(s) and as a separate part of the documentation when using both permanently and portable machines combined.

6. In addition to the permanent washing machines, portable washing equipment and necessary access openings enabling complete washing of shadow areas shall be provided. It shall be possible to carry out the additional washing without entering the tank.
7. Tank washing equipment is to be properly earthed.

302. Requirements for Class Notation “ETC(1)”

1. Tanks shall be designed with smooth surfaces. Under deck longitudinals of slab type are acceptable. Horizontal areas on stiffeners and brackets are not acceptable.
2. Bulkheads may have horizontal or vertical corrugations. Horizontally corrugated bulkheads should not have an angle of the corrugations in excess of 45 degrees related to the vertical plane, see Fig.1 Bulkheads with larger angles, but not more than 65 degrees, may be accepted taking into consideration the location of washing machine(s) in the tanks and the shadow diagrams.

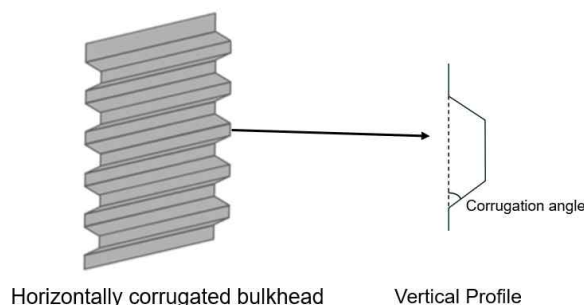


Figure 1. Definition of Corrugation angle, horizontally corrugated bulkhead

3. Vertical girders in horizontally corrugated bulkheads may only be accepted after special consideration. Any shadow area created by such structures shall however be included in the shadow area calculations and arrangement for portable washing without tank entry.
4. Tanks shall be of stainless steel or coated.
5. Cargo piping shall be of stainless steel or coated.
6. Heating coils shall be of stainless steel or equivalent material.
7. Capability of cargo tank washing with hot water of minimum 75°C with a capacity sufficient for washing at least the largest cargo tank. The heater capacity shall be based on a seawater temperature of 0°C.
8. Cargo tanks shall be served by individual in-tank cargo pumps.
9. Cargo suction wells shall be located for optimum drainage results.
10. Permanently installed tank washing systems shall comply with the requirements of IMO Resolution A.446(XI) Section 4.2.8. That is, the total area of the tank sides not directly washed by the washing system (shadow area) shall not exceed 15% of the total vertical side area.

303. Requirements for Class Notation “ETC(2)”

1. Tanks shall be designed with smooth surfaces. Under deck longitudinal of slab type are acceptable. Horizontal areas on stiffeners and brackets are not acceptable.
2. Bulkheads may have horizontal or vertical corrugations. Horizontally corrugated bulkheads should not have an angle of the corrugations in excess of 45 degrees related to the vertical plane, see Fig. 1. Bulkheads with larger angles – but not more than 65 degrees – may be accepted taking into con-

sideration the location of washing machines in the tanks and the shadow diagrams.

3. Vertical girders in horizontally corrugated bulkheads may only be accepted after special consideration. Any shadow area created by such structures shall however be included in the shadow area calculations and arrangement for portable washing without tank entry.
4. Tanks shall be of stainless steel or coated.
5. Cargo piping shall be of stainless steel.
6. Heating coils shall be of stainless steel or equivalent material.
7. Capability of cargo tank washing with hot water of minimum 85°C with a capacity sufficient for washing at least the largest cargo tank. The heater capacity shall be based on a seawater temperature of 0°C.
8. Cargo tanks shall be served by individual in-tank cargo pumps.
9. Cargo suction wells shall be located for optimum drainage results.
10. Permanently installed tank washing machine shall be capable of cleaning at least 96% of the internal tank surface area, based on effective jet length at normal operating pressure.

CHAPTER 2 Survey

Section 1 General

101. Kinds of surveys

Effective Tank Cleaning systems are registered or intended to be registered to the Society, are to be subjected to the following surveys:

1. Survey for classification of the ETC (hereinafter referred to as "Classification Survey")
2. Survey for maintaining classification of the ETC (hereinafter referred to as "Survey Assigned to Maintain Classification"), which are:
 - (1) Annual Survey
 - (2) Special Survey
 - (3) Occasional Survey

102. Time of classification survey and intervals of survey assigned to maintain classification

1. Classification Survey is to be carried out when the application for classification is made.
2. Survey Assigned to Maintain Classification is to be carried out at the periodical

Section 2 Classification survey

201. Drawings and data

For the ETC intended to undergo a Classification Survey during construction, the following plans and information are to be submitted to the Society before the work is commenced.

1. Approval drawings and data
 - (1) Shadow diagram
 - (2) Piping diagram for Cargo compartments cleaning system
 - (3) Arrangement plan for washing machines with nozzle diameters
 - (4) Piping diagram for cargo stripping system including details of termination of air pipes and openings from drain tanks
 - (5) Operating manual

202. Tests and inspections

1. Piping systems and control systems of ETC are to be tested and inspected in accordance with applicable requirements
2. The installation and operational status of the system shall be verified for compliance with the approved drawings.

203. Survey Assigned to Maintain Classification

1. Annual survey
 - (1) External examination of structure, equipment, controls and piping systems
 - (2) Review of the ETC records if necessary
 - (3) Verification of the operation of alarms and safety devices
2. Special survey
 - (1) Annual survey items required by above Par 1
 - (2) Examination of valves, seals, tank cleaning machine, control panels, compartment, etc.

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