



**CHINA CLASSIFICATION SOCIETY**

**Rule Change Notice For  
RULES FOR CLASSIFICATION OF  
MOBILE OFFSHORE UNITS**

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# PART ONE PROVISIONS OF CLASSIFICATION

## CHAPTER 2 SCOPE AND CONDITIONS OF CLASSIFICATION

### Section 7 STATUTORY SERVICES

#### 2.7.5 Statutory certificates and documents

2.7.5.1 Upon satisfactory statutory surveys of the unit, the Surveyors of CCS are to issue or approve the corresponding statutory certificates and documents according to the authorized contents, e.g.:

- (1) Safety Certificate of Mobile Offshore Unit;
- (2) International Load Line Certificate;
- (3) International Tonnage Certificate 1969;
- (4) International Oil Pollution Prevention Certificate;
- (5) International Sewage Pollution Prevention Certificate;
- (6) International Air Pollution Prevention Certificate;
- (7) Statement of Garbage Pollution Prevention from Units;
- (8) Register of ship' s lifting appliances and cargo handling gear, and Certificate of test and thorough examination of lifting appliances;
- (9) Anti-fouling system certificate;
- (10) Ballast water management certificate;
- (11) Safety Management Certificate;
- (12) International Ship Security Certificate;
- (13) Intact Stability Information;
- (14) Documents for damage stability;
- (15) Documents for on-bottom stability;
- (16) Documents for descending and ascending stability;
- (~~15~~17) Unit operation manual;
- (~~16~~18) Other documents or certificates.

# CHAPTER 4 SURVEYS DURING CONSTRUCTION

## Section 3 TIGHTNESS TESTING OF COMPARTMENTS

### 4.3.3 Testing procedures

#### 4.3.3.2 Structural test procedures

##### (1) Type and time of test

- ① Where a structural test is specified in Table 4.3.4.1, a hydrostatic test in accordance with 4.3.4.1 will be acceptable. Where practical limitations (strength of building berth, density of liquid, etc.) prevent the performance of a hydrostatic test, a hydropneumatic test in accordance with 4.3.4.2 may be accepted as an equivalent method.
- ② Provided the results of a leak test are confirmed satisfactory, a hydrostatic test for confirmation of structural adequacy may be carried out while the unit is afloat.

##### (2) ~~Number of structural tests~~ Testing schedule for new construction or major structural conversion

- ① ~~Subject to agreement of CCS, -A~~ structural test is to be carried out for at least one tank of the same construction (i.e. tanks of the same structural design and configuration and same general workmanship as determined by the attending Surveyor) on each unit provided all subsequent tanks are tested for leaks by an air test. Leakage tests using air tests instead of structural tests are not applicable to compartment boundaries on units used for loading cargo required to be isolated or contaminated cargo. All liquid tanks shall be subjected to structural tests if structural weaknesses or serious defects that cannot be detected by leakage tests are found in structural tests. However, where structural adequacy of a tank was verified by structural testing required in Table 4.3.4.1, the subsequent units in the series (i.e. sister units built in the same shipyard) may be exempted from such testing for other tanks which have the structural similarity to the tested tank, provided that the watertightness in all boundaries of exempted tanks are verified by leak tests and thorough inspection. For sister units built several years after the last unit of the series, such exemption may be reconsidered. In any case, structural testing is to be carried out for at least one tank for each unit in order to verify structural fabrication adequacy.
- ② ~~For watertight boundaries of spaces other than tanks (excluding chain lockers), structural testing may be exempted, provided that the watertightness in all boundaries of exempted spaces are verified by leak tests and thorough inspection.~~ The tank boundaries are to be tested from at least one side. The tanks for structural test are to be selected so that all representative structural members are tested for the expected tension and compression.
- ③ ~~These subsequent tanks may require structural testing where necessary after the structural testing of the first tank.~~ The watertight boundaries of spaces other than tanks for structural testing may be exempted, provided that the water-tightness of boundaries of exempted spaces is verified by leak tests and inspections. Structural testing may not be exempted and the requirements for structural testing of tanks in ① to ② of (2) shall apply, for ballast holds, chain lockers and a representative cargo hold if intended for in-port ballasting.
- ④ ~~Tanks for structural test are to be selected so that all representative structural members are tested for the expected tension and compression.~~ Tanks which do not form part of the watertight subdivision of the ship<sup>1</sup>, may be exempted from structural testing provided that the water-tightness of boundaries of exempted spaces is verified by leak tests and inspections.

### 4.3.4 Testing requirements

#### 4.3.4.1 Hydrostatic test

(1) Unless other liquid is approved, the hydrostatic test is to consist of filling the space by fresh water or seawater, whichever is appropriate for testing of the space, to the level specified in Table 4.3.4.1.

(2) In case a tank for cargoes with higher density is to be tested with fresh water or seawater, the testing pressure height is to be specially considered, but the test pressure shall not exceed the maximum design internal pressure at the top of tank.

(3) All external surfaces of the tested space are to be examined for structural distortion, bulging and buckling, other related damage and leaks.

**Testing Requirements for All Units**

**Table 4.3.4.1**

No.	Tank or boundary to be tested	Test type	Test head or pressure	Remarks
1	Double bottom tanks <sup>4</sup>	Leak & Structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of overflow<sup>10</sup>,</li> <li>• to 2.4 m above top of tank<sup>2</sup>, or</li> <li>• to bulkhead deck</li> </ul>	
<del>2</del>	<del>Double bottom voids<sup>5</sup></del>	<del>See SOLAS Reg. II-1/11<sup>6</sup></del>		
2	Double bottom voids <sup>5</sup>	Leak	See 4.3.4.4 through 4.3.4.6, as applicable	including pump room double bottom and bunker tank protection double hull required by MARPOL Annex I
3	Double side tanks	Leak & Structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of overflow<sup>10</sup>;</li> <li>• to 2.4 m above top of tank<sup>2</sup>, or</li> <li>• to bulkhead deck</li> </ul>	
<del>4</del>	<del>Double side voids</del>	<del>See SOLAS Reg. II-1/11<sup>6</sup></del>		
4	Double side voids	Leak	See 4.3.4.4 through 4.3.4.6, as applicable	
5	Deep tanks other than those listed elsewhere in this table	Leak & Structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of overflow<sup>10</sup>, or</li> <li>• to 2.4 m above top of tank<sup>2</sup></li> </ul>	
6	<del>Fuel</del> Cargo oil tanks	Leak & Structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of the overflow<sup>10</sup>,</li> <li>• to 2.4 m above top of tank<sup>2</sup>, or</li> <li>• to top of tank<sup>2</sup> plus <del>setting of any pressure relief valve</del> the design vapour pressure</li> </ul>	
7	Fore peak and after peak tanks	Leak & Structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of overflow<sup>10</sup>, or</li> <li>• to 2.4 m above top of tank<sup>2</sup></li> </ul>	Only applicable to surface-type unit and self-elevating unit with hull of ship-type, after peak to be tested after installation of stern tube, as applicable
8	<del>a. Fore peak voids</del>	<del>See SOLAS Reg. II-1/11<sup>6</sup></del>		<del>Only applicable to surface-type unit</del>
	a. Fore peak spaces with equipment	Leak	See 4.3.4.3 through 4.3.4.6, as applicable	Only applicable to surface-type unit
	b. Fore peak voids	Leak	See 4.3.4.4 through 4.3.4.6, as applicable	Only applicable to surface-type unit

No.	Tank or boundary to be tested	Test type	Test head or pressure	Remarks
	c. Aft peak spaces with equipment	Leak	See 4.3.4.3 through 4.3.4.6, as applicable	Only applicable to surface-type unit and self-elevating unit with hull of ship-type, after peak to be tested after installation of stern tube, as applicable
	d. After peak voids	Leak	See 4.3.4.4 ~ 4.3.4.6, as applicable	Only applicable to surface-type unit and self-elevating unit with hull of ship-type, after peak to be tested after installation of stern tube, as applicable
9	Cofferdams	Leak	See 4.3.4.4 ~ 4.3.4.6, as applicable	
10	a. Watertight bulkheads	Leak <sup>8</sup>	See 4.3.4.3 ~ 4.3.4.6, as applicable <sup>7</sup>	
	b. Superstructure end bulkhead	Leak	See 4.3.4.3 ~ 4.3.4.6, as applicable	
11	Watertight doors below freeboard or bulkhead deck	Leak <sup>6,7</sup>	See 4.3.4.3 ~ 4.3.4.6, as applicable	
12	Shell doors	Leak <sup>3</sup>	See 4.3.4.3 through 4.3.4.6, as applicable	
<del>13</del>	Weather-tight hatch covers and closing appliances	Leak <sup>3,8,7</sup>	See 4.3.4.3 ~ 4.3.4.6, as applicable	Hatch covers closed by tarpaulins and battens excluded
14	Dual purpose tanks/dry cargo hatch covers	Leak <sup>3,7</sup>	See 4.3.4.3 through 4.3.4.6, as applicable	In addition to structural test in item 6 or 7
<del>15</del>	Chain locker	Leak & Structural <sup>1</sup>	Top of chain pipe	
<del>16</del>	<del>Independent tanks</del> L.O. sump. tanks and other similar tanks/spaces under main engines	<del>Leak &amp; Structural<sup>1</sup></del> Leak <sup>9</sup>	<del>The greater of</del> <del>top of the overflow<sup>10</sup> or</del> <del>to 0.9 m above top of tank</del> See 4.3.4.3 through 4.3.4.6, as applicable	
<del>17</del>	Ballast ducts	Leak & Structural <sup>1</sup>	The greater of • ballast pump maximum pressure, or • setting of any pressure relief valve	
<del>18</del>	Brine water tank/mud tank	Leak & Structural <sup>1</sup>	Simulating the actual static water pressure	Carrying out strength check of the test tank under the test pressure head
<del>19</del>	Tank with an open top	Structural <sup>9</sup>	Simulating the actual static water pressure	
20	Voids in spudcans	Leak and structural tests <sup>1</sup>	The head height shall not be less than the maximum design water depth, considering the effects of soil overburden pressure loads	Applicable to the voids in the spudcan that allows no water intake

No.	Tank or boundary to be tested	Test type	Test head or pressure	Remarks
21	Fuel Oil Tanks	Leak and structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of the overflow<sup>10</sup>,</li> <li>• to 2.4 m above top of tank<sup>2</sup>, or</li> <li>• to top of tank<sup>2</sup> plus the design vapour pressure, or</li> <li>• to bulkhead deck</li> </ul>	
22	Fuel oil overflow tanks not intended to hold fuel	Leak and structural <sup>1</sup>	The greater of <ul style="list-style-type: none"> <li>• top of the overflow<sup>10</sup>,</li> <li>• to 2.4 m above top of tank<sup>2</sup>, or</li> <li>• to bulkhead deck</li> </ul>	

Note:

~~1 Subject to agreement of the Administration of the flag State, structural test is to be carried out for at least one tank of the same construction (i.e. same design and same workmanship) on each unit provided all subsequent tanks are tested for leaks by an air test. However, where structural adequacy of a tank was verified by structural testing, the subsequent units in the series (i.e. sister units built in the same shipyard) may be exempted from such testing for other tanks which have the structural similarity to the tested tank, provided that the watertightness in all boundaries of exempted tanks are verified by leak tests and thorough inspection is carried out. In any case, structural testing is to be carried out for at least one tank for each unit in order to verify structural fabrication adequacy (see 4.3.3.2(1)). See 4.3.3.2(2).~~

2 Top of tank is deck forming the top of the tank excluding any hatchways.

3 Hose test may be accepted as a medium of the test (see 4.3.2.1).

4 Including tanks arranged in accordance with the provisions of SOLAS Reg. II-1/9.4.

5 Including duct keels and dry compartments arranged in accordance with the provisions of SOLAS ~~Reg. II-1/9.4~~ regulation II-1/11.2 and II-1/9.4 respectively, and/or oil fuel tank protection and pump room bottom protection arranged in accordance with the provisions of MARPOL Annex I, Chapter 3, Part A regulation 12A and Chapter 4, Part A, regulation 22 respectively.

6 Where watertightness of watertight doors has not been confirmed by prototype test, testing by filling watertight spaces with water is to be carried out. See SOLAS Reg. II-1/16.2 and ~~MSC/Circ.1176~~ MSC.1/Circ.1572/Rev.1 .

~~7 Where a hose test is not practicable, other testing methods listed in 4.3.4.7 ~ 4.3.4.9 may be applicable subject to adequacy of such testing methods being verified. See SOLAS Reg. II-1/1.1.~~

~~8~~7 As an alternative to the hose testing, other testing methods listed in 4.3.4.7 ~ 4.3.4.9 may be applicable subject to the adequacy of such testing methods being verified. See SOLAS Reg. II-1/1.1. For watertight bulkheads (item 10.a) alternatives to the hose testing may only be used where a hose test is not practicable

~~9~~8 Subject to agreement of the Administration of the flag State, the hydrostatic test may be omitted where the watertightness of all boundaries of compartments or tanks is verified by appropriate tests and the structural strength of the boundaries is guaranteed. A "Leak and structural test", see 4.2.2 is to be carried out for a representative cargo hold if intended for in-port ballasting. The filling level requirement for testing cargo holds intended for in-port ballasting is to be the maximum loading that will occur in-port as indicated in the loading manual.

9 Where L.O. sump tanks and other similar spaces under main engines intended to hold liquid form part of the watertight subdivision of the ship, they are to be tested as per the requirements of Item 5, Deep tanks other than those listed elsewhere in this table.

10 The 'top of the overflow' is defined as being the top of any overflow system which is used to prevent overfilling of a tank. Such system can be an overflow pipe, airpipe, intermediate tank. For gravity tanks (i.e. sewage, grey water and similar tanks, not filled with pumps) the top of the overflow is to be taken as the highest point of the filling line.

Note: Gauging devices are not considered equivalent to an overflow system with the exception of fuel oil overflow tanks not intended to hold fuel which have been fitted with a level alarm.

Where a tank is fitted with multiple means of preventing overfilling, the decision on which overflow system is to be used to determine the test head is to be based on the highest point to which the liquid may rise in service.

#### 4.3.4.2 Hydropneumatic test

(1) A hydropneumatic test where approved is to be such that the test condition in conjunction with the approved liquid level and air pressure will simulate the actual loading as far as practicable. The requirements and recommendations for tank air tests in 4.3.4.4 will also apply to the hydropneumatic test.

(2) All external surfaces of the tested space are to be examined for structural distortion, bulging and buckling, other related damage and leaks.

#### 4.3.4.3 Hose test

(1) A hose test is to be carried out with the pressure in the hose nozzle maintained at least at 0.2 MPa during the test. The nozzle is to have a minimum inside diameter of 12 mm and be at a distance to the joint not exceeding 1.5 m. The water jet is to impinge directly upon the weld.

(2) Where a hose test is not practical because of possible damage to machinery, electrical equipment insulation or outfitting items, it may be replaced by a careful visual examination of welded connections, supported where necessary by means such as a dye penetrate test or ultrasonic leak test or an equivalent.

#### 4.3.4.4 Tank air test

(1) All boundary welds, erection joints and penetrations including pipe connections are to be examined in accordance with the approved procedure and under a stabilized pressure differential above atmospheric pressure not less than 0.015 MPa with a leak indication solution such as soapy water/detergent or a proprietary brand applied.

~~(2) It is recommended that the air pressure in the tank be raised to and maintained at about 0.02 MPa for approximately one hour, with a minimum number of personnel around the tank, before being lowered to the test pressure.~~ A U-tube with a height sufficient to hold a head of water corresponding to the required test pressure is to be arranged. The cross sectional area of the U-tube is not to be less than that of the pipe supplying air to the tank. Arrangements involving the use of two calibrated pressure gauges to verify the required test pressure may be accepted taking into account the provisions in F5.1 and F7.4 of IACS Recommendation 140, "Recommendation for Safe Precautions during Survey and Testing of Pressurized Systems" .

~~(3) A U-tube with a height sufficient to hold a head of water corresponding to the required test pressure is to be arranged. The cross sectional area of the U-tube is not to be less than that of the pipe supplying air to the tank. In addition to the U-tube, a master gauge or other approved means to verify the pressure is to be approved.~~

(3) A double inspection is to be made of tested welds. The first is to be immediately upon applying the leak indication solution; the second is to be after approximately four or five minutes in order to detect those smaller leaks which may take time to appear.

#### 4.3.4.5 Compressed air fillet weld test

In this air test, compressed air is injected from one end of a fillet welded joint and the pressure verified at the other end of the joint by a pressure gauge on the opposite side. Pressure gauges are to be arranged so that an air pressure of at least 0.015MPa can be verified at each end of all passages within the portion being tested.

Note: Where a leak test of partial penetration welding is required and the root face is sufficiently large (i.e. 6 ~ 8 mm), the compressed air test is to be applied in the same manner as for a fillet weld

#### 4.3.4.6 Vacuum box test

~~A box (vacuum tester) with air connections, gauges and inspection window is placed over the joint with leak indicator applied. The air within the box is removed by an ejector to create a vacuum of 0.02 ~ 0.026 MPa inside the box.~~ A box (vacuum testing box) with air connections, gauges and an inspection window is placed over the joint with a leak indicating solution applied to the weld cap vicinity. The air within the box is removed by an ejector to create a vacuum of 0.02 ~ 0.026 MPa inside the box.

#### 4.3.4.7 Ultrasonic test

An arrangement of an ultrasonic echoes transmitter placed inside of a compartment and a receiver outside. The watertight/weathertight boundaries of the compartment are scanned with the receiver in order to detect an ultrasonic leak indication. A location where the sound is detectable by the receiver displays a leakage in the sealing of the compartment.

#### 4.3.4.8 Penetration test

A test of butt welds by applying a low surface tension liquid to one side of a compartment boundary. When no liquid is detected on the opposite side of the boundary after expiration of a definite time, the verification of tightness of the compartments boundary can be assumed. [In certain cases, a developer solution may be painted or sprayed on the other side of the weld to aid leak detection.](#)

#### 4.3.4.9 Other tests

Other methods of testing may be considered by CCS upon submission of full particulars prior to commencement of the testing.

# **PART SEVEN FIRE AND EXPLOSION SAFETY**

## **CHAPTER 9 DETENTION OF FLAMMABLE GASES AND HYDROGEN SULFIDE GAS**

### **Section 1 FIXED DETECTION AND ALARM SYSTEMS**

#### **9.1.5 Provision and fitting of detectors**

9.1.5.1 Flammable gas detectors are to be provided for the following spaces and areas:

- (1) enclosed spaces classified as hazardous areas Zone 1 or 2 and their discharge outlets;
- (2) ventilation inlets of enclosed non-hazardous spaces adjacent to hazardous areas and containing internal combustion engines, boilers, or non-explosion proof electrical equipment;
- (3) within enclosures of combustion equipment fuelled by natural gas or crude oil;
- (4) ventilation ducts in which natural gas or crude oil fuel pipes are installed;
- (5) air intakes of the living quarter specified in 4.2.1.4 of Chapter 4 of PART FOUR;
- (6) cellar deck;
- (7) drill floor, mud pit area, shale shaker area;
- (8) enclosed spaces containing the open components of mud circulation system from the bell nipple to the mud pits;
- (9) ventilation intake of positive pressure ~~explosion-proof~~ driller's cabin;
- (10) air intakes to all combustion engines or machinery, including internal combustion engines, boilers, compressors or turbines, located outside of an enclosed machinery space;
- (11) at each access door to accommodation spaces;
- (12) near other openings, including emergency egress, of accommodation spaces, regardless if these openings are fitted with self-closing and gas-tight closing appliances;
- (13) locations deemed by CCS as necessary for special monitoring.