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All respectful ICS surveyors

This Technical Information is published to presents a summary of required and mandatory Maintenance، Inspection & technical tests of Embarkation/Disembarkation ladders & Gangways, based on SOLAS and IMO resolutions, conventions and circulars: Generally these requirements are mandated by the flag administrations requirements, although SOLAS convention requires all the vessels by minimum maintenance and inspection schedule for above mentioned equipments.

The document related to the above mentioned subject and also the supplementary attachments are accessible through the following address on ICS Network (ICS-WAN):

\\server\ICS Organization\Convention and LegislationDepartment\ Publication\Tech\2013\09.

A.GHOLAM ABOLFAZL
head of Convention & Legislation Department
Iranian Classification Society – ICS

A.G.Abolfazl

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کلیه بازرسان محترمICS

با سلام و احترام

این اطلاعیه فنی بر اساس الزامات و زمانبندی لازم جهت بازدید، بازرسی، نگهداری و تست لازم مربوط به Embarkation/Disembarkation ladders و Gangways، بر اساس قطعنامه های سازمان جهانی دریانوردی (IMO) و کنوانسیون حفظ جان اشخاص در دریا (SOLAS)، تهیه و تنظیم گردیده است .

به طور کلی این الزامات و زمانبندی ها تحت دستورالعمل ها و بخشنامه های دولت های صاحب پرچم می باشد و مطالب ارائه شده بصورت کلی و حداقل های مورد نظر کنوانسیون SOLAS می باشد.

این بخشنامه به انضمام پیوست‌های تکمیلی آن در بخش CLD از شبکه داخلی موسسه با آدرس ذیل قابل دسترسی می‌باشد.

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ع.غلام ابوالفضل

سرپرست واحد کنوانسیون ها و مقررات دریایی

موسسه رده بندی ایرانیان

ترک دعوی: اگرچه در گردآوری کلیه راهنماهای فنی ارائه شده توسط موسسه رده بندی ایرانیان ،تا حد ممکن تلاش در دقت و صحت محتوا صورت گرفته است،این موسسه متحمل مسئولیتی در قبال هرگونه اشتباهات ،خسارت های احتمالی و جرائمی که ممکن است در ارتباط با بکار گیری مفاهیم و مطالب ارائه شده رخ دهد، نمی باشد.

Content:

1- GENERAL

The Maritime Safety Committee, at its eighty-sixth session (27 May to 5 June 2009), with a view to providing specific guidance on the construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation ladders and gangways required under regulation II-1/3-9 of the 1974 SOLAS Convention, approved the Guidelines for construction, installation, maintenance and inspection/ survey of means of embarkation and disembarkation, prepared by the sub-committee on Ship design and equipment at its fifty-second session, as set out in the annex.

2- MAINTENANCE

2-1) Accommodation ladders and gangways, including associate winch and fittings, should be properly inspected at monthly basis, as required by SOLAS regulation III/20.7.2, in accordance with manufacturers' instructions.

2-2) Lubrication of moving parts should be done according to maintenance schedule.

2-3) Safety net which associated under the gangway should be checked for any abnormalities, if exist, should be rectified immediately.

2-4) Greasing of gangway wires should be done on specified intervals & according to instruction manual.

2-5) Steps of embarkation/disembarkation ladders, especially gangways, should be always neat & tidy to prevent slippery steps.

2-6) Embarkation/Disembarkation ladders should be painted periodically to prevent corrosion/erosion.

2-7) All bent/defective stanchions should be maintained on good manner & changed defective ones, if exist.

3- INSPECTION/SURVEY:

Inspection/survey of mentioned equipments can be divided separately as follows:

3-1) Accommodation ladder:

The following items should be thoroughly inspected during annual surveys required by SOLAS regulations I/7 and I/8 and checked for satisfactory condition of the embarkation/disembarkation ladders:
3-1.1) Steps
3-1.2) Platforms
3-1.3) All support points such as pivots, rollers, etc.;
3-1.4) All suspension points such as lugs, brackets, etc.
3-1.5) Stanchions, rigid handrails, hand ropes and turntables;
3-1.6) Davit structure, wire and sheaves, etc.; and
3-1.7) Any other relevant provisions stated in these guidelines.

NOTE: At every **five-yearly** survey, upon completion of the examination, the embarkation/disembarkation ladder should be operationally tested with the specified Maximum operational load of the ladder.
The specified tests are as follows:

a) static load test:

Distributing the loads (75kg/step) uniformly along the length of the horizontally laid accommodation Ladder (or gangway) and checking the deflection and damage after minimum 2 minutes. (MSC/Circ.1331, 3.6.3)
(Note: Maximum allowable deflection is **L/75** (for aluminum), **L/100** (for steel), and and it shall be checked when it seems great by the examination with the naked eye.)

b) operational test:

A complete embarkation/disembarkation unit should be tested through a minimum of two times lowering and hoisting to the setting position without specific load, and the condition of falls and ladders should be checked. (MSC/Circ.1331, 3.6.1 & 2)

3-2) Gangway :

The following items should be thoroughly examined during annual surveys required by SOLAS regulations I/7 and I/8 and checked for satisfactory condition of the gangway:
3-2.1) Treads;
3-2.2) Side stringers, cross members, decking, deck plates, etc.
3-2.3) All support points such as wheel, roller, etc.
3-2.4) Stanchions, rigid handrails, hand ropes;
At every **five-yearly** survey, upon completion of the examination, the embarkation/disembarkation ladders should be operationally tested with the specified maximum operational load.
The specified tests are as follows:

a) Static Load Test:

Distributing the loads (75kg/step) uniformly along the length of the horizontally laid accommodation Ladder (or gangway) and checking the deflection and damage after minimum 2 minutes. (MSC/Circ.1331, 3.6.3)
(Note: Maximum allowable deflection is **L/75** (for aluminum), **L/100** (for steel), and it shall be checked when it seems great by the examination with the naked eye.)

b) operational test:

A complete embarkation/disembarkation unit should be tested through a minimum of two times lowering and hoisting to the

setting position without specific load, and the condition of falls and ladders should be checked. (MSC/Circ.1331, 3.6.1 & 2)

3-3) Winch:

During annual surveys required by SOLAS regulations I/7 and I/8, the following items should be examined for satisfactory condition:
3-3.1) Brake mechanism including condition of brake pads and band brake, if fitted;
3-3.2) Remote control system; and
3-3.3) Power supply system (Motor).
At every **five-yearly** survey, upon completion of the examination, the winch should be operationally tested with the specified maximum operational load of the accommodation ladder.
following tests should be done during **five yearly** survey:

a) Static Load Test:

Distributing the loads (75kg/step) uniformly along the length of the horizontally laid accommodation Ladder (or gangway) and checking the deflection and damage after minimum 2 minutes. (MSC/Circ.1331, 3.6.3)
(Note: Maximum allowable deflection is **L/75** (for aluminum), **L/100** (for steel), and it shall be checked when it seems great by the examination with the naked eye.)

b) Operational Test:

A complete embarkation/disembarkation unit should be tested through a minimum of two times lowering and hoisting to the setting position without specific load, and the condition of winch and ladder should be checked. (MSC/Circ.1331, 3.6.1 & 2)

4- RENEWAL :

This chapter is intended a summary of guidelines for the construction, installation, maintenance and inspection/survey of means of renewing falls of any embarkation/disembarkation ladders such as gangways & load test required under regulation II-1/3-9 of the 1974 SOLAS convention, adopted by resolution MSC.256(84). Where means of embarkation and disembarkation other than those specifically covered by mentioned guideline are fitted, an equivalent level of safety should be provided.

4-1) Construction:

Accommodation ladders and gangways for means of embarkation and disembarkation which are provided on board ships constructed on or after 1st of January 2010 should meet applicable international standards such as ISO 5488:1979, Shipbuilding – accommodation ladders, ISO 7061:1993, Shipbuilding – aluminum shore gangways for seagoing vessels and/or national standards and/or other requirements recognized by the Administration. Such accommodation ladders and gangways fitted on ships constructed before 1st of January 2010, which are replaced after that date, should, in so far as is reasonable and practicable, comply with these guidelines.
The structure of the accommodation ladders and gangways and their fittings and attachments should be such as to allow regular inspection, maintenance of all parts and, if necessary, lubrication of their pivot pin. Special care should be taken to ensure that the welding connection works are properly performed. The construction and test of accommodation ladder winches should be in accordance with applicable international standards such as ISO 7364:1983 Shipbuilding and marine structures– deck machinery – accommodation ladder winches.

4-2) Installation:

4-2-1) Location:

As far as practicable, the means of embarkation and disembarkation should be

sited clear of the working area and should not be placed where cargo or other suspended loads may pass overhead.

4-2-2) Lighting:

Adequate lighting should be provided to illuminate the means of embarkation and disembarkation, the position on deck where persons embark or disembark and the controls of the arrangement.

4-2-3) Arrangements:

Each accommodation ladder should be of such a length to ensure that, at a maximum design operating angle of inclination, the lowest platform will be not more than 600 mm above the waterline in the lightest seagoing condition, as defined in SOLAS regulation III/3.13.

The arrangement at the head of the accommodation ladder should provide direct access between the ladder and the ship's deck by a platform securely guarded by handrails and adequate handholds. The ladder should be securely attached to the ship to prevent overturning.

For ships on which the height of the embarkation/disembarkation deck exceeds 20 m above the waterline and on other ships for which the Administration considers compliance with the provisions of 1st paragraph of this chapter. Impractical, an alternative means of providing safe access to the ship or supplementary means of safe access to the bottom platform of the accommodation ladder may be accepted.

4-2-4) Marking

Each embarkation and disembarkation ladder(such as gangway or accommodation ladder) should be clearly marked at each end with a plate visible to any person approaching either end and showing the restrictions on the safe operation and loading, including the maximum and minimum permitted design angles of inclination, design load, maximum load on bottom end plate, etc. Where the maximum operational load is less than the design load, it should also be shown on the marking plate.

4-2-5) Lifebuoy:

A lifebuoy equipped with a self-igniting light and a buoyant lifeline should be available for immediate use in the vicinity of the embarkation and disembarkation arrangement when in use.

4-2-6) Tests (load test):

The load used for the test should be:

3-4.1) The design load; or

3-4.2) The load nominated by the ship owner or operator only in those cases where the design load or maximum operational load is not known (e.g., for accommodation ladders or gangways which are provided on board ships constructed prior to 1 January 2010) in which case that nominated load should be used as the maximum operational load for all purposes within these guidelines.

3-4.3) The tests should be carried out with the load applied as uniformly as possible along the length of the accommodation ladder or gangway, at an angle of inclination corresponding to the maximum bending moment on the accommodation ladder or gangway.

3-4.4) Following satisfactory completion of the applicable test(s) without permanent deformation or damage to the tested item, the load used for that test should be marked as the maximum operational load.

NOTE*:* During annual surveys required by SOLAS regulations I/7 and I/8, all fittings and davits on the ship's deck associated with embarkation/disembarkation ladders and gangways should be examined for satisfactory condition.

After installation, the winch and the accommodation ladder should be operationally tested to confirm proper operation and condition of the winch and the ladder after the test.

The winch should be tested as a part of the complete accommodation ladder unit through a minimum of two times hoisting and lowering of the accommodation ladder in accordance with the onboard test requirement specified in applicable international standards such as ISO 7364:1983. Every new accommodation ladder should be subjected to a static load test of the specified maximum working load upon installation.

a) Static Load Test:

Distributing the loads (75kg/step) uniformly along the length of the horizontally laid accommodation Ladder (or gangway) and checking the deflection and damage after minimum 2 minutes. (MSC/Circ.1331, 3.6.3)
(Note: Maximum allowable deflection is **L/75** (for aluminum), **L/100** (for steel), and it shall be checked when it seems great by the examination with the naked eye.)

b) Operational Test:

A complete embarkation/disembarkation unit should be tested through a minimum of two times lowering and hoisting to the setting position without specific load, and the condition of winch and ladder should be checked. (MSC/Circ.1331, 3.6.1 & 2)

4-2-5) Position:

Gangways should not be used at an angle of inclination greater than 30° from the horizontal and accommodation ladders should not be used at an angle greater than 55° from the horizontal. Gangways should never be secured to a ship's guardrails unless they have been designed for that purpose. If positioned through an open section of bulwark or railings, any remaining gaps should be adequately fenced.
Adequate lighting for means of embarkation and disembarkation and the immediate approaches should be ensured from the ship and/or the shore in hours of darkness.

4-2-6) Rigging (safety net):

A safety net should be mounted in way of the embarkation & disembarkation ladders(such as accommodation ladders and gangways) where it is possible that a person may fall from the means of embarkation and disembarkation or between the ship and quayside.

4-2-7) Verification:

Upon installation, the compliance of the entire arrangement with these guidelines should be verified.

5- PERIOD OF TEST/CHANGE (IF NEEDED):

For all ships, the means of embarkation and disembarkation (Both existing and newly fitted equipment) must be inspected and maintained in a suitable condition for their intended purpose, taking into account any restrictions related to safe loading. All falls (wires) used to support the means of embarkation and disembarkation must be maintained as specified in regulation III/20.4 for lifesaving launching appliances. This will require monthly inspections recorded in the log book (With special regard for areas passing through sheaves) and renewal when necessary due to deterioration of the falls or at intervals of **not more than five years**, whichever is earlier.
A **five-yearly** operational load test will be required to be performed on all embarkation/disembarkation, gangways and winches. This will be carried out in conjunction with the first Safety equipment renewal survey after January 1, 2010, but no later than January 1, 2015, for those ships on a harmonized five-year survey cycle. For vessels which are not on a five year cycle, consideration should be given to conducting the Cargo Ship Safety Equipment or

Passenger Ship Safety Renewal survey in conjunction with the Special Survey for convenience. Thereafter, it should be conducted at five-yearly intervals.

a) Static Load Test:

Distributing the loads (75kg/step) uniformly along the length of the horizontally laid Accommodation Ladder (Or Gangway) and checking the deflection and damage after minimum 2 minutes. (MSC/Circ.1331, 3.6.3) (Note: Maximum allowable deflection is **L/75** (For aluminum), **L/100** (For steel), and it shall be checked when it seems great by the examination with the naked eye.)

b) Operational Test:

A complete embarkation/disembarkation unit should be tested through a minimum of two times lowering and hoisting to the setting position without specific load, and the condition of winch and ladder should be checked. (MSC/Circ.1331, 3.6.1 & 2)

NOTE: for testing falls, the surveyor shall confirm that falls are of rotation resistant & corrosion resistant steel wire rope(LSA code para.6.1.2.3) through checking product certificate or manufacturer's certificate.

6- APPENDIX:

1- SOLAS Reg II/3-9……

2- SOLAS Reg III/20.4…….

3- SOLAS Reg I/7, I/8……..

4- MSC-1/Circ1331……...