Survey of Container Carriers

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part B
Guidance for the Survey and Construction of Steel Ships Part M

Reason for Amendment

In recent years, the size of container carriers has continued to increase which in turn has led to a corresponding increase in the usage of extremely thick steel plates for the structural members of such ships. In response, NK has been considering various measures for preventing brittle crack initiation and crack propagation in such plates. These measures are mainly ones intended to contribute to improving ship safety not only during the ship construction stage, but also during periodical surveys.

As a result of the above, in cases where electro-gas welding is applied to the block-to block butt joints of container carrier longitudinal structural members that are constructed of extremely thick steel plates, it was confirmed that it is appropriate to apply to the stricter ISO5817 Quality Level B as the acceptance criteria of non-destructive testing for such joints. In addition, with respect to periodical surveys, it was confirmed that it is important to carry out general examinations of such joints.

Accordingly, relevant requirements were amended based upon the above.

Outline of Amendment

Amended the requirements related to surveys of container carriers.

“Rules for the survey and construction of steel ships” has been partly amended as follows:

Part B CLASS SURVEYS

Chapter 3 ANNUAL SURVEYS

3.2 Annual Surveys for Hull, Equipment, Fire Extinction and Fittings

3.2.2 General Examination*

At Annual Surveys, examinations of hull, equipment, fire-extinction and fittings listed in **Table B3.2** are to be carried out.

Table B3.2 has been amended as follows.

Table B3.2 General Examination

Items	Examination
1 Shell plating 2 Weather deck plating	・ Confirmation that areas visible above the load waterline are in good condition.
3 Openings on deck and outside of the hull	・ Confirmation that the means of securing the weathertightness of cargo hatchways, other hatchways and other openings on the freeboard and superstructure decks are in good condition. ・ Confirmation that the watertight integrity of the closures to any openings in the ship’s side below the freeboard deck is in good condition. ・ Confirmation that the side scuttles and deadlights are in good condition.
4 Casings of engine room	・ Confirmation that the following are in good condition: exposed engine casings and their openings; and skylights of the engine room and boiler room and their closing appliances.
5 Ventilators	・ Confirmation that the ventilators including their coamings and closing appliances are in good condition.
6 Air pipes	・ Confirmation that the air pipes including their coamings and closing appliances are in good condition. ・ For closing appliances, open up examinations may be required depending upon their condition.
7 Watertight bulkhead, superstructure end bulkhead and deckhouses	・ Confirmation that watertight doors, penetrations and stop valves on watertight bulkheads, and closing appliances of openings in deckhouses or companions protecting hatchways giving access to spaces below freeboard deck are in good condition. ・ Confirmation that the superstructure end bulkheads and the openings therein are in good condition.
8 Load line marks	・ Confirmation that deck line and load line markings are appropriate.
9 Bulwark	・ Confirmation that bulwarks and the shutters of its freeing ports; and hinges and guard rails are in good condition.
10 Means of access	・ Confirmation that the guardrails, gangways, walkways and other means provided for the protection of the crew and means for safe passage of crew are in good condition.
11 Scuppers, inlets, other discharge pipes and valves	・ Confirmation that the scuppers, inlets and discharges including their valves are in good condition. ・ Confirmation that the garbage chutes including their valves are in good condition.
12 Securing arrangement for on-deck timber	・ Confirmation that securing arrangement for on-deck timber including eye plates, lashing wires, etc. is in good condition regardless of timber freeboard markings.

Table B3.2 General Examination (Continued)

Items	Examination
13 Anchoring and mooring arrangement	・ Confirmation that the anchoring and mooring arrangements including their accessories are in good condition as far as can be seen. ・ Confirmation that the means provided to minimize water ingress through the spurling pipes and chain lockers are in good condition.
14 Fire extinguishing arrangement	・ Confirmation that the fire extinguishing arrangement is in good condition and the fixed fire extinguishing system, semi-portable and portable fire extinguishers, firefighters' outfits, emergency fire pumps and the international shore connection are maintained in good order.
15 Fire protection arrangement and means of escape	・ Confirmation that no alteration has been made to these arrangements since the last survey. (This includes the confirmation that emergency escape breathing devices (EEBDs) are complete and in good condition.)
16 Sails and their accessories	・ Confirmation that sails and their accessories are in good condition. They are to be in place and ready for unfolding at the time of examination.
17 Towing and mooring fittings	・ Confirmation that the marks of Safe Towing Load (*TOW*) on towing fittings and Safe Working Load (*SWL*) on mooring fittings as specified in **27.2.2 or 27.2.3, Part C** or **23.2.2 or 23.2.3, Part CS** are clearly visible and these fittings are in good condition.
18 Loading computer	・ Confirmation that the computer of ships required to have one in accordance with the provisions of **34.1.1** and **34.3.2, Part C** is maintained in good order.
19 Ship Identification Number	・ Confirmation that the markings of the ship's identification number for ships required to be so marked are in good condition.
20 Means of embarkation and disembarkation	・ Confirmation that the means of embarkation and disembarkation are in good condition.
21 Bow doors, inner doors, side shell doors and stern doors	・ Confirmation that the bow doors, inner doors, side shell doors and stern doors are in good condition.
22 Hearing protectors	・ Confirmation that hearing protectors are in good condition
23 Portable gas detecting instruments	・ Confirmation that portable gas detecting instruments are in good condition. (This includes the confirmation of calibration records.)
24 Helicopter facilities	・ Confirmation that the helicopter facilities, such as helidecks, means of escape, fire-fighting appliances, helicopter refuelling and hanger facilities, are in good condition, and that operations manual is provided.
25 Special arrangements for carrying dangerous goods	・ Confirmation, when appropriate, that the special arrangements for carrying dangerous goods are in good condition. (This includes the check of the electrical equipment and wiring, the ventilation, the provision of protective clothing and portable appliances.)
Additional Requirement for Tankers, Ships Carrying Dangerous Chemicals in bulk and Ships Carrying Liquefied Gases in bulk	
26 Piping	・ Confirmation that cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in cargo pump room, cargo compressor rooms and on weather decks are in good condition. ・ Confirmation that the earthing between hull structures and cargo piping systems (cargo oil pipes, vent pipes, tank washing pipes, etc.) is in good condition.
27 Cargo tank	・ Confirmation that the cargo tank openings, including gaskets, covers, coamings and screens are in good condition. ・ Confirmation that the cargo tank pressure/vacuum valves and devices to prevent the passage of flame are in good condition. ・ Confirmation that the cargo tank venting, cargo tank purging and gas-freeing and other ventilation systems are in good condition. ・ Confirmation that the earthing between hull structures and the cargo tank is in good condition.
28 Wire gauze to prevent the passage of flame	・ Confirmation, as far as practicable, that the wire gauze to prevent the passage of flame on vents to all bunker, oily-ballast and oily-slop tanks and void spaces are in good condition.
29 Safe access to the bow	・ Confirmation that the means of safe access to the bow is in good condition.
30 Emergency towing arrangements	・ Confirmation that emergency towing arrangements for ships of not less than 20,000 tonnes deadweight are in good condition.

Table B3.2 General Examination (Continued)

Items	Examination
Additional Requirement for Bulk Carriers over 10 *years* of age	
31 Piping in the cargo holds	・ Confirmation that all piping and penetrations in cargo holds, including overboard piping, are in good condition.
Additional Requirement for General Dry Cargo Ships of not less than 500 *gross tonnage* and over 15 *years* of age	
32 Piping in the cargo holds	・ Confirmation that all piping and penetrations in cargo holds, including overboard piping, are in good condition.
Additional Requirement for Container Carriers	
33 Block-to-block butt joints of strength decks and hatch side coamings (including top plates and attached longitudinal stiffeners)	・ In the case of container carriers using extremely thick steel plates which comply with **32.13, Part C of the Rules**, it is to be confirmed, as far as practicable, that block-to-block butt joints of strength decks and hatch side coamings (including top plates and attached longitudinal stiffeners) are in good condition.

Note:

Examination of suspect areas identified at previous surveys is to be carried out.

Chapter 5 SPECIAL SURVEYS

5.2 Special Surveys for Hull, Equipment, Fire Extinction and Fittings

5.2.2 General Examination*

Sub-paragraph -5 has been added as follows.

1 At Special Surveys, items **(1)** to **(3)** below in addition to hull, equipment, fire-extinction, and fittings specified in **4.2.2** are to be examined carefully.

(1) All bilge and ballast piping systems

(2) Automatic air pipe heads which are located on exposed decks as well as the ventilators and closing appliances of machinery and cargo spaces

(3) For ships having bow doors, inner doors, side shell doors and stern doors, the surveys specified in **(a)** and **(b)** below are to be carried out.

(a) Clearance measurements of hinges, bearings and thrust bearings are to be taken. Unless otherwise specified in the Operating and Maintenance Manual or by manufacturer recommendation, such clearance measurements may be limited to representative bearings in cases where dismantling is necessary in order to perform such measurements. If dismantling is carried out, a visual examination of hinge pins and bearings together with non-destructive testing of the hinge pin is to be carried out.

(b) The non-return valves of the drainage system are to be dismantled and examined.

2 At Special Surveys for tankers and ships carrying dangerous chemicals in bulk, in addition to **-1,** cargo piping, vent piping, purging piping, gas free piping, inert gas piping and all other piping systems within all cargo tanks, all ballast tanks and all tanks and spaces bounding cargo tanks such as pump rooms, pipe tunnels, cofferdams, and void spaces and on weather decks are to be examined.

3 At Special Surveys for ships carrying liquefied gases in bulk, in addition to **-1**, cargo piping, vent piping, purging piping, gas free piping, inert gas piping and all other piping systems within all cargo tanks, all ballast tanks and all tanks and spaces bounding cargo tanks such as pump rooms, cargo compressor rooms, pipe tunnels, cofferdams, and void spaces and on weather decks are to be examined.

4 At Special Surveys for bulk carriers and general dry cargo ships of not less than 500 *gross tonnage*, in addition to **-1**, all piping systems within all cargo holds, all ballast tanks, and all tanks and spaces bounding cargo holds such as pipe tunnels, cofferdams and void spaces, and on the weather deck are to be examined.

5 At Special Surveys for container carriers using extremely thick steel plates which comply with **32.13, Part C of the Rules**, in addition to **-1**, the block-to-block butt joints of strength decks, hatch side coamings (including top plates and attached longitudinal stiffeners), sheer strakes, and the topmost strakes of inner hulls and bulkheads (only one strake adjacent to strength decks) are to be examined from both sides as far as practicable. Furthermore, additional non-destructive inspections may be required based upon the results of such examination when deemed necessary by the attending surveyor.

“Guidance for the survey and construction of steel ships” has been partly amended as follows:

Part M WELDING

M8 NON-DESTRUCTIVE INSPECTION FOR THE WELDED JOINTS OF HULL CONSTRUCTIONS

M8.6 Non-destructive Testing Criteria

Paragraph M8.6.2 has been added as follows.

M8.6.2 Quality Level

The wording “Where it is deemed necessary by the Society” in **8.6.2-1, Part M of the Rules** means the cases in which electro-gas welding is applied to container carrier hatch side coamings that are constructed of extremely thick steel plates which comply with **32.13, Part C of the Rules**.