

Thickness Measurements at Special Surveys

Amended Rules

Rules for the Survey and Construction of Steel Ships Part B

Reason for Amendment

IMO resolution A.1049(27) (2011 ESP Code) established the specific standards to be applied to the Enhanced Survey Programmes (ESP) for bulk carriers and oil tanker under regulation 2 of Chapter XI-1 in SOLAS. At the 103rd meeting of the IMO Maritime Safety Committee (MSC 103) in May 2021, a revision of the ESP Code was discussed, and part of the discussion regarded the need for thickness measurements at Special Survey No.1 (SS No.1) for double hull oil tankers.

During this discussion, IACS presented thickness measurement data it had collected to show that the amount of corrosion at the time of a SS No.1 was generally below the level regarded as significant. IACS also explained that anti-corrosion measures had been further improved by the application of the IMO coating performance standard adopted in 2006 (resolution MSC.288(87)). IACS, therefore, suggested that there was no longer any real need for thickness measurements to be required at SS No.1. After deliberating on the matter, the IMO agreed that thickness measurements carried out as part of a general assessment and recording of corrosion patterns no longer needed to be compulsory at the time of SS No.1. The IMO adopted this change as resolution MSC 483(103).

In response, IACS amended its Unified Requirements (UR) Z10.3 and Z10.4, which incorporate the ESP Code, to align them with the newly revised ESP Code. These amendments were adopted as IACS UR Z10.3(Rev. 20) and Z10.4(Rev. 17). It should be noted that these URs also provide for thickness measurements during the first Special Survey No.1 for ships carrying dangerous chemicals in bulk, which have now been amended in the same way.

Relevant requirements are therefore amended in accordance with the amending of the 2011 ESP Code and the IACS UR Z series.

In addition, although NK independently requires thickness measurements for the purpose of recording corrosion patterns for bulk carriers at the time of SS No.1, the verification of recent thickness measurement results has confirmed that no significant corrosion is generally found at the time of SS No.1. Therefore, as the need for thickness measurements to record corrosion patterns is now considered to be low, relevant requirements for bulk carriers are amended in the same way as well.

Outline of Amendment

- (1) Amends part of the wording of the definition for “ballast tanks”.
- (2) Amends the measurement points for thickness measurements to be taken at Special Surveys No.1 for bulk carriers, oil tankers and ships carrying dangerous chemicals in bulk.

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

Part B CLASS SURVEYS

Chapter 1 GENERAL

1.3 Definitions

1.3.1 Terms*

Sub-paragraph (1) has been amended as follows.

- (1) “Ballast tank” is a tank which is being used ~~solely~~ primarily for salt water ballast. For a space which is used for both cargo and salt water ballast, the followings requirements of (a) and (b) below are applied.
 - (a) The space is treated as a Ballast Tank when substantial corrosion has been found in that space.
 - (b) For oil tankers and ships carrying dangerous chemicals in bulk with integral tanks, the tanks used for the carriage of cargo or ballast water as a routine part of the vessel’s operation are treated as Ballast Tanks. Cargo tanks in which water ballast might be carried only in exceptional cases per **MARPOL Annex I/18.3** are to be treated as cargo tanks.

Chapter 5 SPECIAL SURVEYS

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

5.2.6 Thickness Measurements*

Table B5.10-1 has been amended as follows.

Table B5.10-1 Requirements of Thickness Measurements for Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk with integral tanks

Special Surveys	Structural members subject to thickness measurement
<u>Requirements for Double Hull Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk</u>	
1 Special Survey for ships up to 5 years of age (Special Survey No.1)	<ul style="list-style-type: none"> (1) Suspect areas (2) One section of deck plating for the full beam of the ship within the cargo area (in way of a ballast tank, if any, or a cargo tank used primarily for water ballast) (3) Structural members subject to close-up survey for general assessment and recording of corrosion pattern (4) Cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in pump room and on weather decks, when deemed necessary by the Surveyor as a consequence of general examinations specified in 5.2.2
2 Special Survey for ships over 5 years and up to 10 years of age (Special Survey No.2)	<ul style="list-style-type: none"> (1) Suspect areas (2) Within the cargo area: <ul style="list-style-type: none"> (a) Each deck plate (b) One transverse section. When the selected section is a transversely framed section, adjacent frames and their end connections in way of the transverse section are to be included. (3) Structural members subject to close-up survey for general assessment and recording of corrosion pattern (4) Selected wind and water strakes outside the cargo area (5) Cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in pump room and on weather decks, when deemed necessary by the Surveyor as a consequence of general examinations specified in 5.2.2
3 Special Survey for ships over 10 years and up to 15 years of age (Special Survey No.3)	<ul style="list-style-type: none"> (1) Suspect areas (2) Within the cargo area: <ul style="list-style-type: none"> (a) Each deck plate (b) Two transverse sections. When the selected section is a transversely framed section, adjacent frames and their end connections in way of the transverse section are to be included. (3) Structural members subject to close-up survey for general assessment and recording of corrosion pattern (4) Selected wind and water strakes outside the cargo area (5) All wind and water strakes within the cargo area (6) Internals in fore and aft. peak ballast tank (7) Cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in pump room and on weather decks, when deemed necessary by the Surveyor as a consequence of general examinations specified in 5.2.2 (8) For ships carrying dangerous chemicals in bulk, selected steel cargo pipes outside cargo tanks and ballast pipes passing through cargo tanks

Table B5.10-1 Requirements of Thickness Measurements for Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk with integral tanks (Continued)

Special Surveys	Structural members subject to thickness measurement
<p>4 Special Survey for ships over 15 years of age (Special Survey No.4 and subsequent Special Surveys)</p>	<p>(1) Suspect areas</p> <p>(2) Within the cargo area:</p> <p>(a) Each deck plate</p> <p>(b) Three transverse sections. When the selected section is a transversely framed section, adjacent frames and their end connections in way of the transverse section are to be included.</p> <p>(c) Each bottom plate</p> <p>(3) Structural members subject to close-up survey for general assessment and recording of corrosion pattern</p> <p>(4) All wind and water strakes</p> <p>(5) Internals in fore peak tank and after peak ballast tank</p> <p>(6) All exposed main deck plating outside the cargo area</p> <p>(7) Representative exposed superstructure deck plating (poop, bridge and forecastle deck)</p> <p>(8) All keel plates, full length, and an appropriate number of bottom plates in way of cofferdams, machinery space, and aft end of tanks</p> <p>(9) Plating of sea chests, and shell plating in way of overboard discharges (as deemed necessary by the Surveyor)</p> <p>(10) Cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in pump room and on weather decks, when deemed necessary by the Surveyor as a consequence of general examinations specified in 5.2.2</p> <p>(11) For ships carrying dangerous chemicals in bulk, selected steel cargo pipes outside cargo tanks and ballast pipes passing through cargo tanks</p>
Requirements for Ships Other Than Double Hull Oil Tankers	
<p>1 Special Survey for ships up to 5 years of age (Special Survey No.1)</p>	<p>(1) Suspect areas</p> <p>(2) One section of deck plating for the full beam of the ship within the cargo area (in way of a ballast tank, if any, or a cargo tank used primarily for water ballast)</p> <p>(3) Structural members subject to close-up survey for general assessment and recording of corrosion pattern</p> <p>(4) Cargo oil, fuel oil, ballast, vent pipes including vent masts and headers, inert gas pipes and all other piping in pump room and on weather decks, when deemed necessary by the Surveyor as a consequence of general examinations specified in 5.2.2</p>
<p>2 Special Survey for ships over 5 years and up to 10 years of age (Special Survey No.2)</p>	<p>Same as required for Special Survey No.2 for Double Hull Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk</p>
<p>3 Special Survey for ships over 10 years and up to 15 years of age (Special Survey No.3)</p>	<p>Same as required for Special Survey No.3 for Double Hull Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk</p>
<p>4 Special Survey for ships over 15 years of age (Special Survey No.4 and subsequent Special Surveys)</p>	<p>Same as required for Special Survey No.4 and subsequent Special Surveys for Double Hull Oil Tankers and Ships Carrying Dangerous Chemicals in Bulk</p>

Table B5.15 has been amended as follows.

Table B5.15 Requirements of Thickness Measurements for Bulk Carriers

Special Surveys	Structural members subject to thickness measurement
<p>1 Special Survey for ships up to <i>5 years</i> of age (Special Survey No.1)</p>	<p>(1) Suspect areas (2) At least structural members subject to close-up survey for general assessment and recording of corrosion pattern (3) Air pipes and sounding pipes in cargo holds in way of tank top. Depending upon the results of close-up surveys, measurements may be omitted at the discretion of the Surveyor. (4) All cargo hold hatch coamings (plating and stiffeners) (5) All cargo hold hatch covers (plating and stiffeners)</p>
<p>2 Special Survey for ships over <i>5 years</i> and up to <i>10 years</i> of age (Special Survey No.2)</p>	<p>(1) Suspect areas (2) Structural members within the cargo length area: (a) Two transverse sections of deck plating, outside the line of cargo hatch openings (b) All strength deck plating, where log cargoes or other cargoes that are prone to accelerate corrosion are loaded (3) At least structural members subject to close-up survey for general assessment and recording of corrosion pattern (4) All piping arrangements in cargo holds. Depending upon the results of close-up surveys, may be omitted at the discretion of the Surveyor. (5) All cargo hold hatch coamings (plating and stiffeners) (6) All cargo hold hatch covers (plating and stiffeners) (7) Wind and water strakes in way of the transverse sections of 2-(1)(2)(a) above (8) Selected wind and water strakes outside the cargo length area</p>
<p>3 Special Survey for ships over <i>10 years</i> and up to <i>15 years</i> of age (Special Survey No.3)</p>	<p>(1) Suspect areas (2) Structural members within the cargo length area: (a) Each deck plating outside the line of cargo hatch openings (b) Two transverse sections, one in the midship area, outside the line of cargo hatch openings. When the selected section is a transversely framed section, adjacent frames and their end connections in way of the transverse section are to be included. (3) At least structural members subject to close-up survey for general assessment and recording of corrosion pattern (4) All piping arrangements in cargo holds. Depending upon the results of close-up surveys, may be omitted at the discretion of the Surveyor. (5) All cargo hold hatch coamings (plating and stiffeners) (6) All cargo hold hatch covers (plating and stiffeners) (7) Internals in fore and aft peak ballast tanks (8) All wind and water strakes within the cargo length area (9) Selected wind and water strakes outside the cargo length area</p>

Table B5.15 Requirements of Thickness Measurements for Bulk Carriers (Continued)

Special Surveys	Structural members subject to thickness measurement
<p>4 Special Survey for ships over 15 <i>years</i> of age (Special Survey No.4 and subsequent Special Surveys)</p>	<p>(1) Suspect areas</p> <p>(2) Structural members within the cargo length area:</p> <p>(a) Each deck plating outside the line of cargo hatch openings</p> <p>(b) Three transverse sections, one in the midship area, outside the line of cargo hatch openings. When the selected section is a transversely framed section, adjacent frames and their end connections in way of the transverse section are to be included.</p> <p>(c) Each bottom plate</p> <p>(3) At least structural members subject to close-up survey for general assessment and recording of corrosion pattern</p> <p>(4) All piping arrangements in cargo holds. Depending upon the results of close-up surveys, may be omitted at the discretion of the Surveyor.</p> <p>(5) All cargo hold hatch coamings (plating and stiffeners)</p> <p>(6) All cargo hold hatch covers (plating and stiffeners)</p> <p>(7) Internals in fore and aft peak ballast tanks</p> <p>(8) All exposed main deck plating outside the cargo length area</p> <p>(9) Representative exposed superstructure deck plating (poop, bridge and forecastle deck)</p> <p>(10) All keel plates, full length, and an appropriate number of bottom plates in way of cofferdams, machinery space, and aft end of tanks</p> <p>(11) Plating of sea chests, and shell plating in way of overboard discharges (as deemed necessary by the Surveyor)</p> <p>(12) All wind and water strakes</p>