GUIDANCE NOTES
GD28-2020

INTERNATIONAL SHIP CLASSIFICATION

Guidelines for Preparation and Implementation of Survey Programme on the Enhanced Programme of Inspections during Surveys (ESP)

Effective from 1 January 2021

September 2020

CONTENTS

PREAMBLE

1 Purpose

The purpose of these Guidelines is to guide shipowners to correctly and efficiently prepare the enhanced programme of inspections during surveys (hereinafter referred to as the survey programme), provide technical support for the smooth and timely approval of the programme by International Ship Classification (hereinafter referred to as ISC), and ensure the preparation of technical assessment carried out by the shipping company before the special survey or intermediate survey (if applicable) of ESP ships and the follow-up survey work conducted by site surveyors are connected systematically and seamlessly, jointly promoting survey quality and shipping safety for ESP ships.

2 Preparation basis

These guidelines is developed based on ISC Rules for Classification of Sea-going Steel Ships (2018), including its 2020 amendments (hereinafter referred to as the ISC Rules), IMO International Code on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers (hereinafter referred to as the 2011 ESP Code) and the requirements of IACS UR Z10s and URZ11, etc., and in combination with the audit findings of ISC on the survey programme submitted by shipowners, as well as feedbacks from on-site surveys, ISC internal and external audits.

3 Liability Exemption

These guidelines are only provided as a guidance document to the ISC-classed ESP shipowners, and provides support and assistance to the shipowners. The implementation of this guidelines is to follow the professional judgment of surveyors. These guidelines cannot replace the provisions in ISC Rules and 2011 ESP Code.

If certain provisions of this guidelines are inconsistent or conflict with the latest ISC Rules or the 2011 ESP Code, the latter shall prevail.

4 Contact for feedback

Any comments and/or recommendations from interested parties in the implementation ofthese Guidelines, please feed back to the Classed Ship In-service Department of ISC Headquarters by the email: cdwork@ISC.org.cn.

Chapter 1 General

Section 1 Background

At the end of the last century, oil tankers and bulk carriers accounted for a large proportion of ship loss and hull structure damage accidents in the world shipping transportation, which attracted the attention of the competent authorities, maritime fields, especially the shipowners, cargo owners and underwriters of oil tankers and bulk carriers at that time. In this case, the International Association of Classification Societies (IACS) adopted UR Z10.1 "Hull Surveys for Oil Tankers", UR Z10.2 "Hull Surveys for Bulk Carriers" and UR Z11 " Mandatory Ship Type and Enhanced Survey Programme (ESP) Notations" (hereinafter referred to as ESP) at the 26th meeting in November 1992 and the 27th meeting in June 1993, which came into effect on 1st July 1993. The International Maritime Organization (IMO) adopted Resolution A.744(18) Guidelines on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers on 4th November 1993, and the 1994 amendments to the 1974 SOLAS Convention were adopted by Resolution No. 1 in the contracting government conference to the 1974 SOLAS Convention (adopted on 24th May 1994), and incorporated the Resolution A.744(18) into the newly added SOLAS Reg. XI/2 to be the mandatory requirements of SOLAS Convention, which came into force on 1st January 1996. Since then, IMO adopted Resolution A.1049 (27) ESP Code on 30th November, 2011, meanwhile, as a provision of SOLAS Reg. XI-1 / 2, which took effect on 1st January 2014.

IMO Maritime Safety Committee adopted the 2019 amendments to 2011 ESP Code by the MSC.461(101) Resolution, which will come into force on 1st January 2021.

Section 2 Scope of Application and Meanings of ESP

1.2.1 This guideline is applicable to a series of ship types, i.e.: oil tankers, bulk carriers, ore carriers, self-unloading bulk carriers and chemical tankers of Diagrams of Mandatory Ship Types for Ships Having ESP Notation listed in Appendix 2 of Chapter 2, PART ONE of ISC Rules, other ships assigned with ESP notation can refer to this Guidelines.

1.2.2 Prior to the special survey for the ships having ESP notation or the intermediate survey for ships with the age of 10 years or above, shipowners are to prepare detailed survey programme together with ISC.

1.2.3 The preparation of survey programme is not only the planning and extension of the implementation of ESP inspection, but also an integral part of the whole ESP inspection requirements, which belongs to the survey procedure. The survey programme is a preparation link before the special survey of ESP ships or the intermediate survey of ESP ships with age of 10 years or above and is prepared by the shipowner and the surveyors, so that the site surveyor knows the coating conditions of the compartments in advance and finds the main deficiencies (corrosion, crack and buckling) of the hull structure as far as possible before boarding the ship. At the same time, it is also a technical evaluation on the survey conditions, methods and equipment in the ESP

inspection, and plays a positive role in better cooperating with the site surveyor's work, improving the inspection quality, shortening the inspection period, as well as prevention of potential structural deficiencies.

Section 3 Definitions and Requirements of Main Terminologies Involving ESP

1.3.1 ESP ships

1.3.1.1 Ships having ESP notation (hereinafter referred to as ESP ships) include the followings:

(1) Oil tanker: a sea-going self-propelled ship which is constructed generally with integral tanks and intended primarily to carry oil in bulk. Usually, it has single or double hull construction, as well as tankers with alternative structural arrangements, e.g. mid-deck designs. Typical midship sections are given in Figure 1.3.1.1(1).

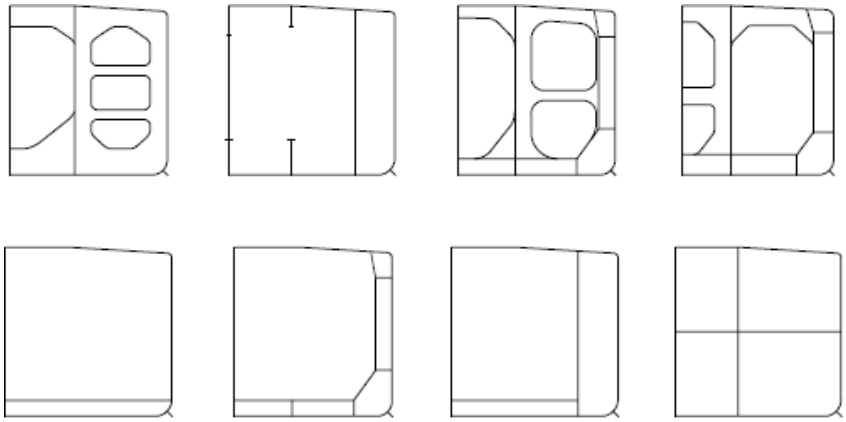

Figure 1.3.1.1(1)

(2) Bulk carrier: a sea-going self-propelled ship which is constructed generally with single deck, double bottom, hopper side tanks, topside tanks and with single or double side skin construction in cargo length area and intended primarily to carry dry cargoes in bulk. Typical midship sections are given in Figure 1.3.1.1(2).

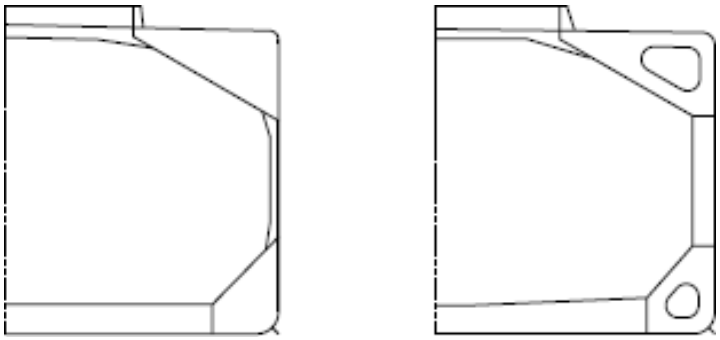

Figure 1.3.1.1(2)

(3) Ore carrier: a sea-going self-propelled ship which is constructed generally with single deck,

two longitudinal bulkheads and a double bottom throughout the cargo length area and intended primarily to carry ore cargoes in the center holds only. Typical midship sections are given in Figure 1.3.1.1(3).

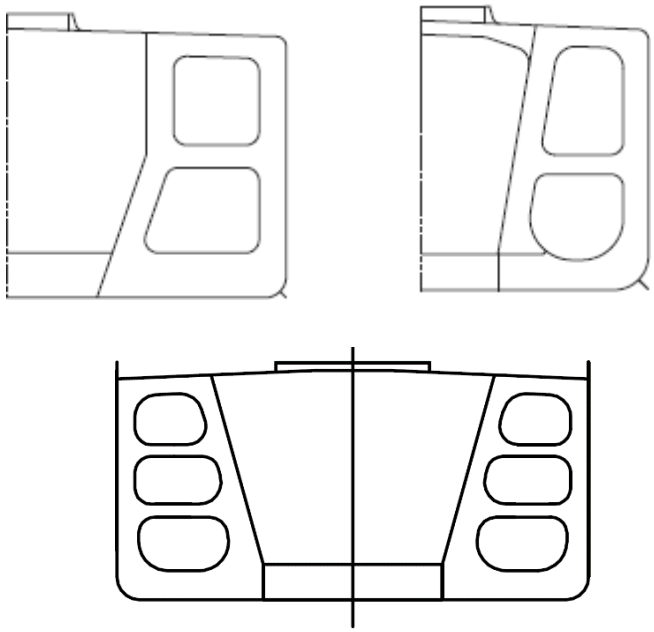

Figure 1.3.1.1(3)

(4) Self-unloading bulk carrier: a sea-going self-propelled ship which is constructed generally with single deck, double bottom, hopper side tanks and topside tanks and with single or double side skin construction in cargo length area and intended to carry and self-unload dry cargoes in bulk. Typical midship sections are given in Figure 1.3.1.1(4).

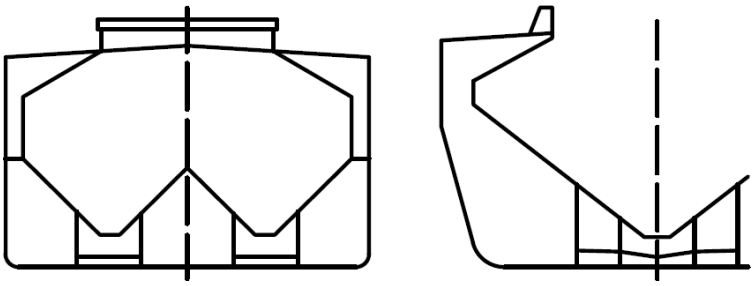

Figure 1.3.1.1(4)

(5) Chemical tanker: a sea-going self-propelled which is constructed generally with integral tanks and intended primarily to carry chemicals in bulk. Usually, it has single or double hull construction, as well as tankers with alternative structural arrangements. Typical midship sections are given in Figure 1.3.1.1(5).

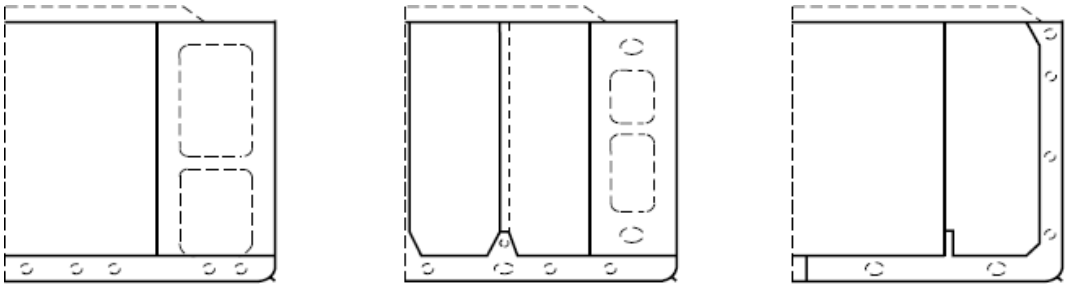

Figure 1.3.1.1(5)

(6) Combination carrier (no such ship type in current ISC fleet)

Combination carrier: a general term applied to ships intended for the carriage of both oil and solid cargoes in bulk; these cargoes are not carried simultaneously, with the exception of oily mixture retained in slop tanks. Typical midship sections are given in Figure 1.3.1.1(6).

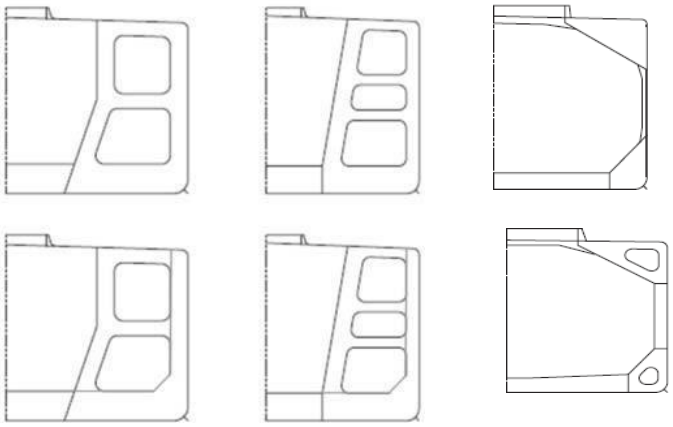

Figure 1.3.1.1(6)

1.3.1.2 For the above-mentioned ships engaged on international voyages, ESP notation is necessary. For ships engaged on non-international voyages which are subject to the enhanced survey procedures, the notation is to be selected by the shipowner voluntarily, and attention is to be paid to the special requirements of flag States.

1.3.1.3 Definitions of sister ships and similar ships:

(1) Sister ships: refer to the ships constructed according to the identical drawings (even if the drawings are approved by different classification societies) and have the identical hull structure type, dimensions and cargo hold structures or cargo hold arrangement.

(2) Similar ships: refer to the ship type and main dimensions (length, width and depth), the frame spacing in the damaged area are almost the same (the maximum deviation is 10%), with almost the same deadweight or gross tonnage (the maximum deviation is 1%), as well as the same number and arrangement of cargo tanks / liquid cargo tanks.

1.3.2 ESP inspection

1.3.2.1 According to ISC Rules and 2011 ESP Code, ESP inspection is a requirement both for classification survey and statutory survey. The requirements of ISC Rules on ESP inspection for bulk carriers and oil tankers are consistent with those for self-propelled bulk carriers and oil

tankers with a gross tonnage of 500 gross tons and above in the current 2011 ESP Code. ESP inspection refers to the inspection of the hull structure and piping system of cargo holds / liquid cargo tanks, pump tanks, cofferdams, pipe tunnels, void spaces and fuel tanks as well as all ballast tanks within the cargo length area during the annual survey, intermediate survey and special survey. If applicable, it is to include the document audit, overall inspection, close-up inspection, evaluation of coating condition, hull thickness measurement and tank testing, for the contents of inspection, please refer to Sections 7, 8 and 9 of Chapter 5, PART ONE in the ISC Rules.

1.3.2.2 Since the third special survey for the ESP involving ships of 20,000DWT and over, at least two competent professional surveyors are to attend onboard simultaneously for carrying out the inspection of hull structure and piping system of cargo holds / liquid cargo tanks, pump tanks, cofferdams, pipe tunnels, void spaces and fuel tanks as well as all ballast tanks within the cargo length area during the intermediate survey and special survey.

1.3.2.3 For single-side skin bulk carriers of 100,000DWT and over with the age between 10 and 15 years, at least two competent professional surveyors are to attend onboard simultaneously for carrying out the inspection of hull structure and piping system of cargo holds / liquid cargo tanks, pump tanks, cofferdams, pipe tunnels, void spaces and fuel tanks as well as all ballast tanks within the cargo length area during the intermediate survey.

1.3.2.4 For ships with dull class, ISC and the classification society related to may designate one surveyor to perform the inspection required in 1.3.2.2 and / or 1.3.2.3 on the basis of complying with the relevant laws and regulations.

1.3.3 ESP survey programmes

1.3.3.1 The shipowner in cooperation with ISC are to work out a detailed survey programme prior to the commencement of the special survey for ESP ships or the intermediate survey for ESP ships with the age over 10 years. The survey programme at intermediate survey may consist of the survey programme at the pervious special survey supplemented by the hull condition evaluation report and the later relevant survey reports. The survey programme is to be worked out taking into account any amendments to the survey requirements after the last special survey was carried out. The survey programme is to be prepared in written according to the information listed in Appendix 11A of Chapter 5, PART ONE in the CCR Rules. ESP inspection can only be carried out after the survey program is made. Before the survey programme is prepared, shipowner is to fill in the Survey Planning Questionnaire to Survey Programme listed in Appendix 11B of Chapter 5, PART ONE in the CCR Rules and submit it to ISC.

1.3.4 Documentation onboard

1.3.4.1 For ESP ships, the shipowner is to supply and maintain onboard documents, which is to be readily available for the surveyors:

(1) A survey report file is to be a part the documentation onboard, consisting of:

① reports of structural surveys;

② hull condition evaluation reports;

③ thickness measurement reports.

(2) Supporting documents:

① The following additional documentation is to be available onboard:

a. survey programme as required in 1.3.3 until the special survey or intermediate survey (if applicable) has been completed;

b. main structural plans of cargo /cargo oil and ballast tanks (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the drawings. The midship section drawing to be supplied onboard the ship is to include the minimum allowable hull girder sectional properties for the hold/tank transverse section in all cargo holds/tanks);

c. previous repair history;

d. cargo and ballast history;

e. inspection by ship's personnel with reference to:

(i) structural deterioration in general;

(ii) leakage in bulkheads and piping;

(iii) condition of coating or corrosion protection, if any;

f. extent of use of inert gas plant and tank cleaning procedures (for oil tankers and chemical tankers);

g. any other information that will help identify suspect areas and/or critical structural areas requiring inspection.

② For GBS ships, the ship construction file (SCF), limited to the items to be retained onboard, is to be available onboard.

1.3.4.2 The documentation is to be retained onboard for the lifetime of the ship.

1.3.4.3 For GBS ships, the shipowner is to arrange the updating of the SCF throughout the ship's life whenever a modification of the documentation included in the SCF has taken place. Documented procedures for updating the SCF are to be included within the safety management system.

Section 4 Preparation Process and Timeliness of Survey Programme

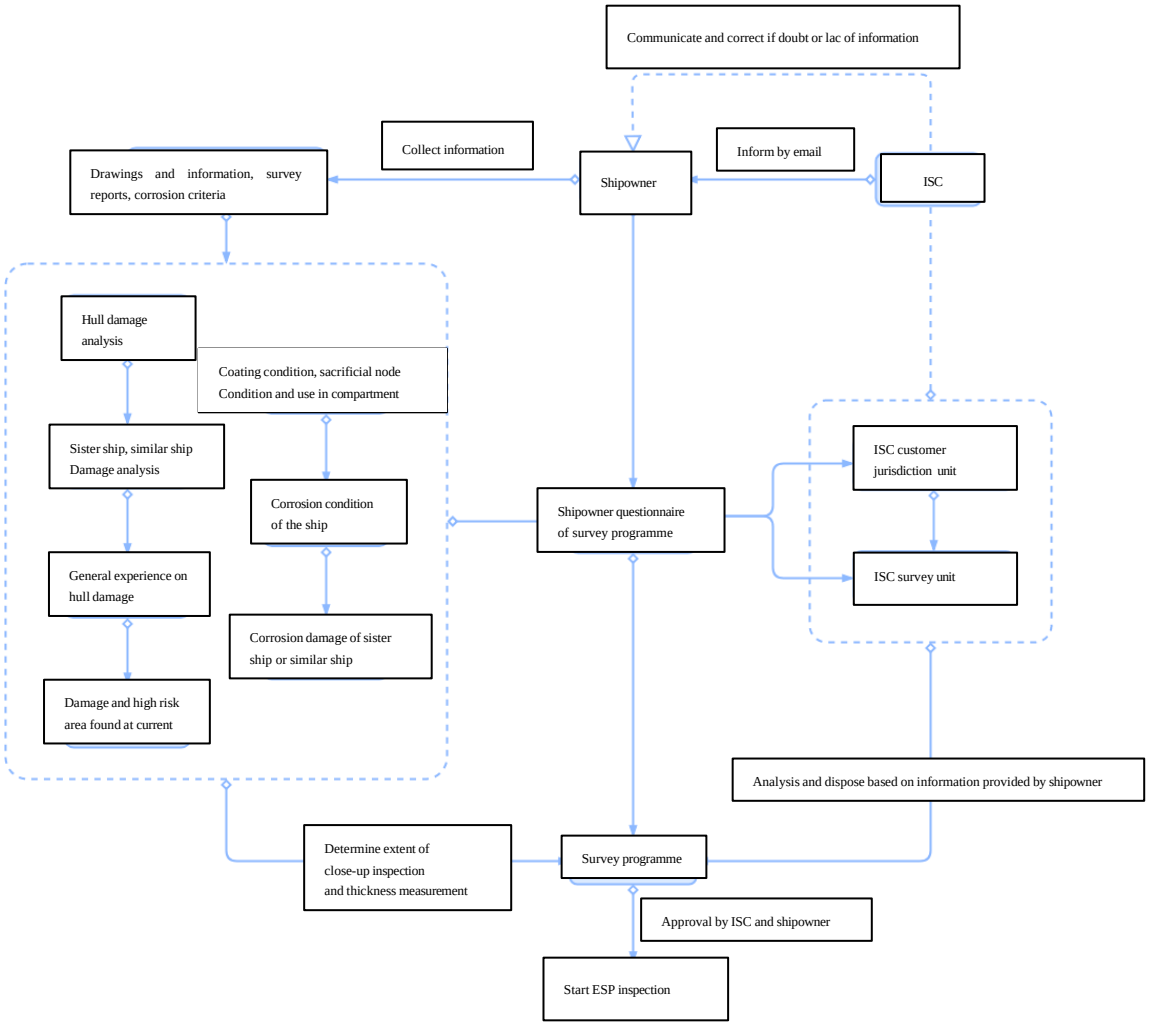

Figure 1.4 Preparation process of survey programme

1.4.1 ISC is automatically to send emails to the shipowners of ESP ships who enter the survey programme preparation window (six months before the due date of each special survey and intermediate survey for ships with the age over 10 years). The email contains blank templates of the survey programme (in the format of Form ESP-BC (bulk carrier, ore carrier, self-unloading bulk carrier)) and Form ESP-T (oil tanker, chemical tanker)) as an attachment to remind the shipowners to start the preparation of survey programme as soon as possible. The shipowner may automatically download the blank template of survey programme from ISC website (https://www.isclass.com). In ISC blank templates, the Survey Planning Questionnaire to Survey Programme, as the Appendix 2 in Enhanced Survey Programme, is to be completed firstly.

1.4.2 Shipowners are to fill the Survey Planning Questionnaire to Survey Programme in accordance with the survey results, survey arrangement and ship history records (for details, refer to Section 1, Chapter 2 (bulk carriers, ore carriers) and Section 1, Chapter 3 (oil tankers, chemical

tankers). In principle, shipowners are to submit the Survey Planning Questionnaire to Survey Programme to ISC survey unit three months before the survey.

1.4.3 In process of preparation of the survey programme, the shipowner and ISC are to fully maintain communication and assist ISC to collect relevant information, such as providing relevant structural drawings, damage information of sister ships, and timely feedback on the changes of ship owner's questionnaire.

1.4.4 In principle, the shipowner is to complete and submit the survey programme containing the Survey Planning Questionnaire to Survey Programme together with the ISC survey unit one month before the survey commenced. The ISC survey unit is to complete the review at least one week before the survey commenced and endorse the survey programme. The minimum requirement is that the signing date of the shipowner on the survey programme is earlier than that of the survey programme. ESP inspection is to be carried out after the survey programme is confirmed and endorsed.

1.4.5 If the survey place cannot be determined, the Survey Planning Questionnaire to Survey Programme is to be submitted to the ISC local unit within the shipowner's area according to the above timeline, and the unit is to complete the preparation of the survey programme together with the shipowner.

1.4.6 The ISC reviewed and approved survey programme is to be kept onboard for reference by relevant parties. This is also the requirement of the 1974 SOLAS Convention for statutory documentation onboard ships and the verification requirements for port State control officers.

Chapter 2 Key Points of Preparation For ESP-BC

Section 1 Survey Planning Questionnaire to Survey Programme

The following information will ensure that the shipowner and ISC can jointly prepare a survey programme in compliance with the requirements of this Chapter. The shipowner is to provide the latest information when filling in the questionnaire. After filling, the questionnaire can provide materials and information that meet the requirements of this Chapter[①].

Attentions:

(1) In principle, shipowners are to submit the Survey Planning Questionnaire to Survey Programme is to the ISC survey unit or customer jurisdiction unit three months before the survey starts.

(2) The Survey Planning Questionnaire to Survey Programme is included in Appendix 2 of Form ESP-BC (Appendix 2, pages 14-18 of the blank template).

(3) The contents of this Chapter is applicable to the references for single-side skin bulk carriers, double skin bulk carriers[②], ore carriers and self-unloading bulk carriers.

1 Ship's particulars

Ship's name

Ship's name: fill in accordance with the ship's certificate of nationality/registration certificate.

IMO number

IMO number: fill in accordance with the ship's certificate of nationality/registration certificate.

Flag State

Flag Sate: in consistent with the flag State in the ship's certificate of nationality/ registration certificate.

Port of registry

Port of registry: fill in accordance with the ship's certificate of nationality/registration certificate.

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① The underlined texts in this Chapter and Chapter 3 are the Chinese version of Survey Programme and Survey Planning Questionnaire to Survey Programme. For the details, refer to Appendix 11A and Appendix 11B of Chapter 5, PART ONE of ISC Rules.

② Double Skin Bulk Carrier means a ship which is constructed generally with single deck, double bottom, topside tanks and hopper side tanks in cargo spaces, and is intended primarily to carry dray cargo in bulk, including such types as ore carriers and combination carriers, in which all cargo holds are bounded by a double-side skin (regardless of the width of the wing space). Please pay attention to the difference between double skin bulk carrier and ISC notation of double-side skin bulk carrier (Bulk Carrier, Double Side Skin), for the minimum distance requirement of the inner hull and outer hull for the later one is 1000mm and above.

Shipowner

Shipowner: i.e.: the owner, in consistent with the flag State in the ship's certificate of nationality/ registration certificate.

Recognized organization (RO)

RO: International Ship Classification。 **Gross tonnage**

Gross tonnage: fill in accordance with the data in the International Tonnage Certificate (1969), pay attention to that the gross tonnage is only a value, without unit.

Deadweight (metric tonnes)

Deadweight (metric tonnes): fill by referring to the approved loading manual/stability calculation sheet or by inquiring the survey status issued by ISC. Generally, 2 digits are reserved after the decimal point.

Date of build

Date of build: means the date of completion of ship construction survey, may fill in by reference of classification certificate.

2 Provisions on means for access of close-up inspection and thickness measurement

Shipowner is to make defined arrangements for the means of access to carry out close-up inspection and thickness measurement of structures in each area of the following table before the survey. Close inspection is a survey where the details of structural components are within the close visual inspection range of the surveyor (i.e. normally within reach of hand).

Hold/Tank No.	Structure	Permanent means of access	Temporary staging	Hydraulic arm vehicle	Raft	Ladder	Direct access	Other means for access (explanation)
Fore peak	Fore peak							
Aft peak	Aft peak							
Cargo holds / tanks	Hatch coaming							
	Topside slopping plate							
	Upper stool plating							
	Cross deck							
	Side shell, frames and brackets							
	Transverse bulkhead							
	Hopper tank plating							
	Lower stool							
	Inner bottom							
Topside tanks	Under deck							
	Side shell and structure							
	Slopping plate and structure							
	Webs ad bulkheads							
Hopper tanks	Slopping plate and structure							

	Side shell and structure							
	Bottom structure							
	Webs and bulkheads							
Double side skin tanks (double skin bulk carriers)	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure							
	Upper stool internal structure							
	Lower stool internal structure							
Wing tans of ore carriers	Under deck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Attentions: Shipowners are required to pay attention to the implementation of the relevant requirements of 5.1.6.2, Chapter 5, PART ONE in the ISC Rules, especially for:

(1) For survey of cargo holds/tanks and ballast tanks, and for close-up inspection of hull structures, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyors, is to be provided:

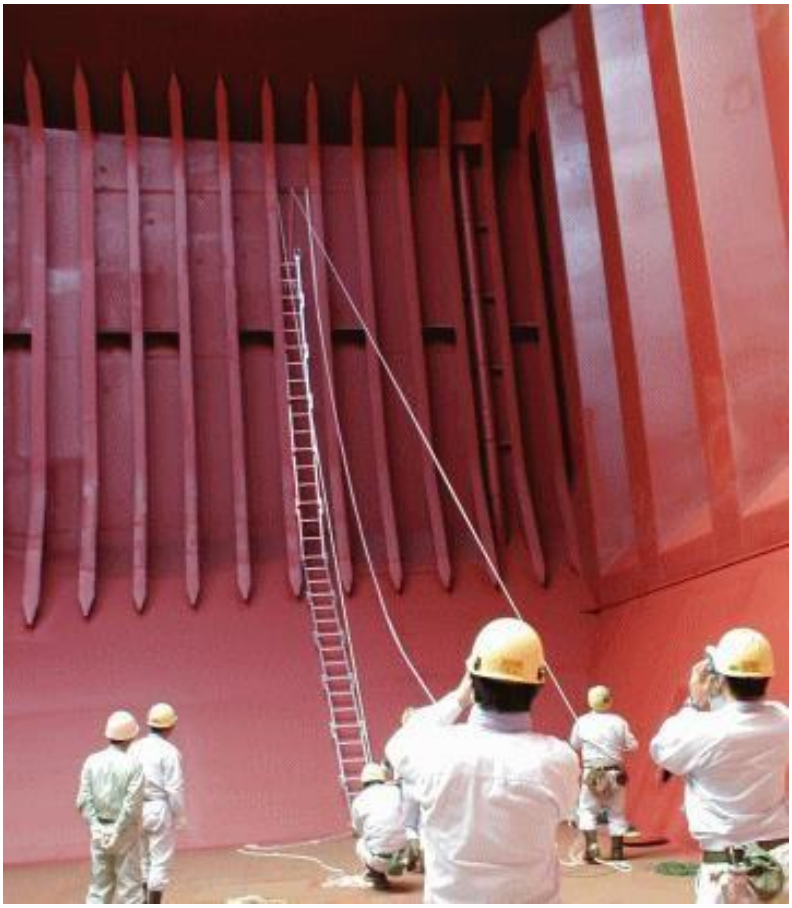
① permanent staging and passages through structures;

② temporary staging and passages through structures；

③ hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

④ boats or rafts;

⑤ portable ladders;



⑥ other equivalent means for access.

(2) For close-up inspection of cargo hold shell frames of bulk carriers less than 100,000DWT, one or more of the following means for access, acceptable to the

surveyors, is to be provided:

① permanent staging and passages through structures;

② temporary staging and passages through structures;

③ hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

④ boats or rafts, provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water;

⑤ portable ladder restricted to not more than 5m in length may be accepted for inspection of lower section of a shell frame including brackets;

⑥ other equivalent means for access.

(3) For close-up inspection of cargo hold shell frames of bulk carriers of 100,000DWT and above, and when the annual surveys, intermediate survey under 10 years of age and special survey No.1 is carried out, one or more of the following means for access, acceptable to the surveyors, is to be provided:

① permanent staging and passages through structures;

② temporary staging and passages through structures;

③ hydraulic arm vehicles such as conventional cherry pickers, lifts (hydraulic arm vehicles or lifts (conventional cherry pickers) may be accepted by site surveyor may accept for the close-up inspection of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17m) and movable platforms;

④ boats or rafts, provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water;

⑤ other equivalent means for access;

⑥ notwithstanding the exclusion of portable ladder, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the close-up inspection of the minimum required cargo hold shell frames described in the annual survey of the above-mentioned for ship age of 10 years above.

(4) For close-up inspection of cargo hold shell frames of bulk carriers of 100,000DWT and above, and when the intermediate survey under 10 years of age and special survey No.1 is carried out, one or more of the following means for access, acceptable to the surveyors, is to be provided:

① either permanent or temporary staging and passage through structures for close-up inspection of the upper part of hold frames;

② hydraulic arm vehicles such as conventional cherry pickers (hydraulic arm vehicles or lifts (conventional cherry pickers) may be accepted by site surveyor may accept for the close-up inspection of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17m) used for inspections of lower and middle parts of shell frames as alternative to staging;

③ lifts and movable platforms;

④ boats or rafts, provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water;

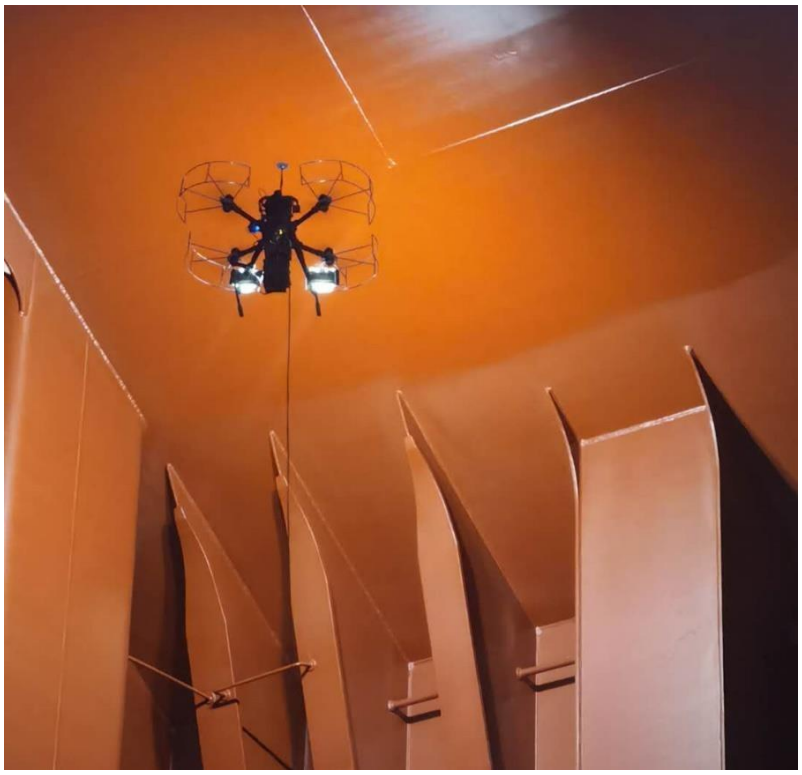
⑤ other equivalent means for access.

(5) For surveys conducted by use of a remote inspection technique (RIT) approved or accepted by ISC, one of more of the following means for access, acceptable to the surveyor, is to be provided:

① unmanned robot arm (URA);

② remote operated vehicles (ROV);

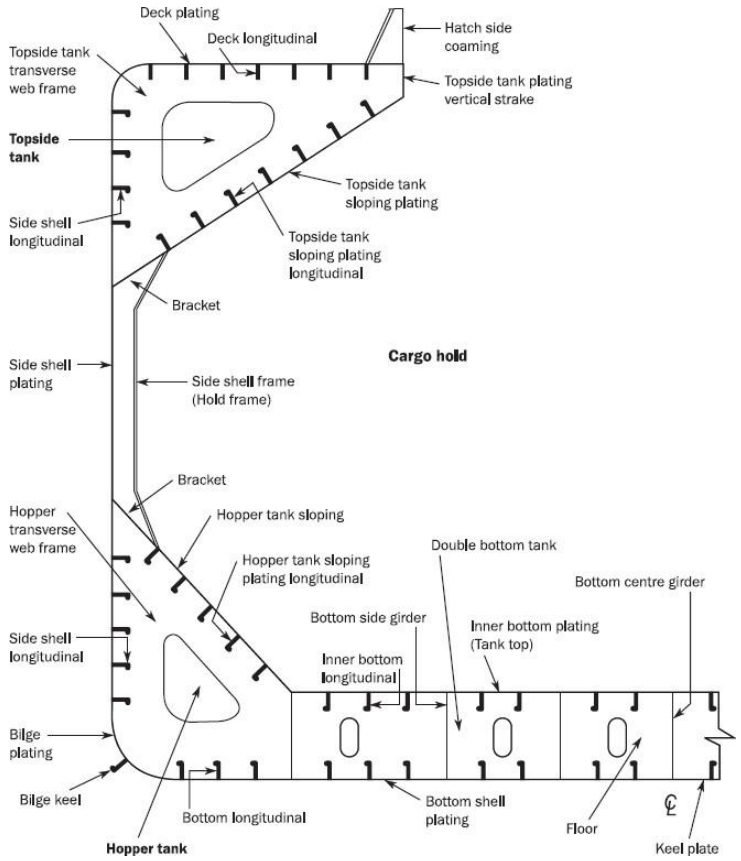
③ Drones;

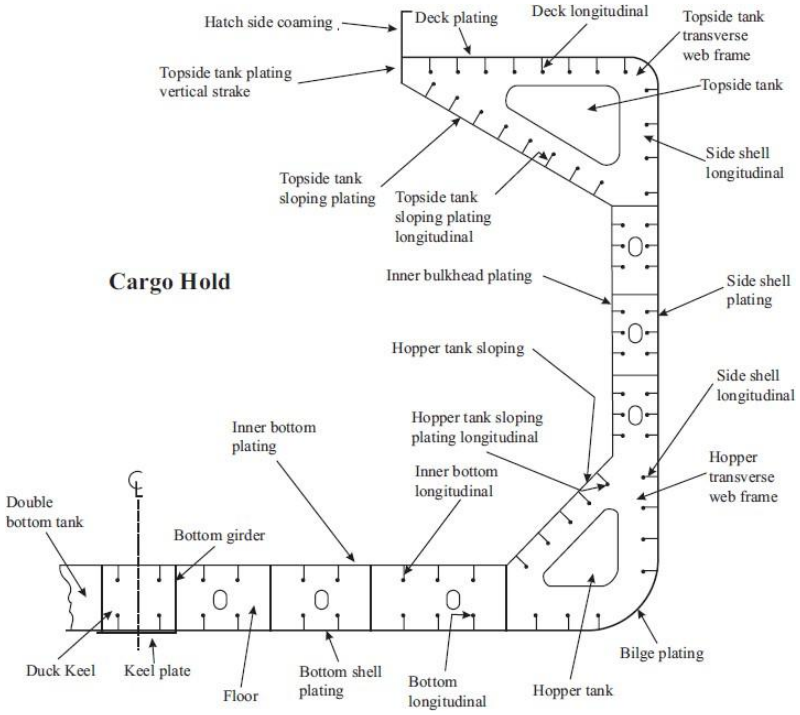


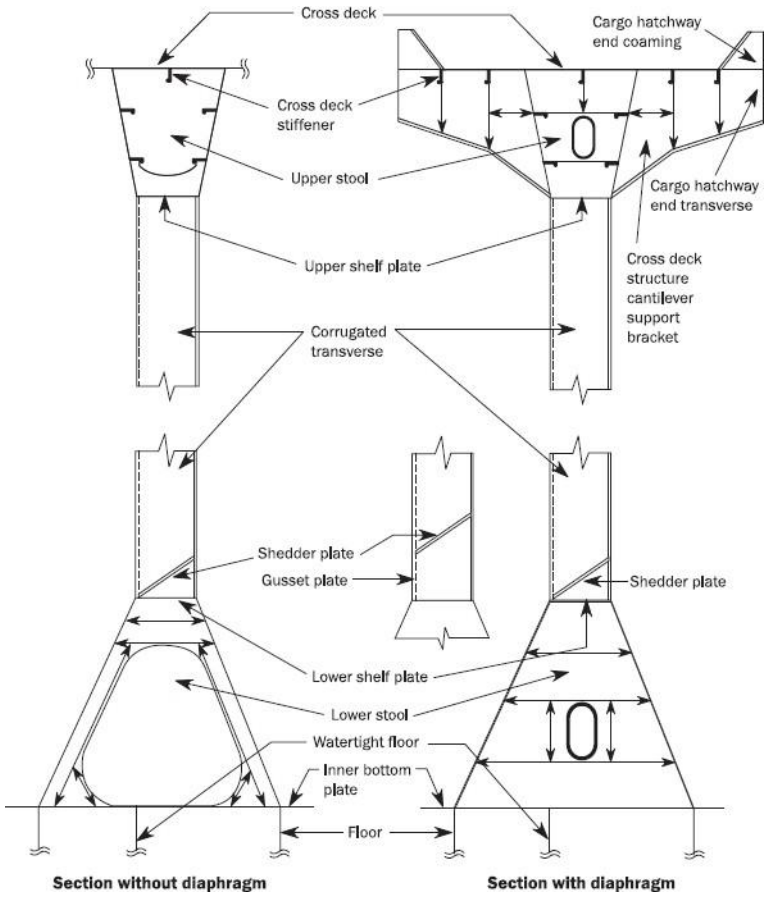
④ Other means for access accepted by ISC;

⑤ Although RIT is not included in IACS UR / UI for ESP inspection, ISC may accept it as an auxiliary means for close-up inspection with the consent of flag States, however, it must pay attention to meet the conditions proposed by the flag States.

(6) Typical terminologies of single-side skin bulk carrier, double skin bulk carrier and corrugated watertight transverse bulkhead may refer to the following figures:

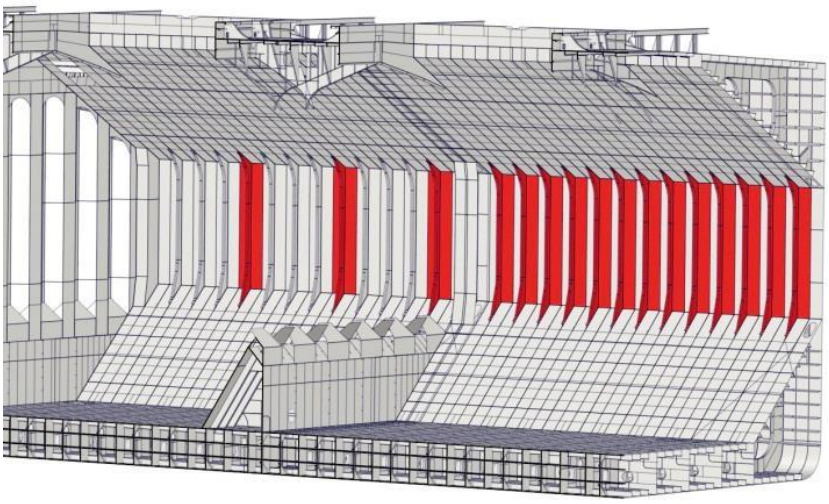

Deck plating
Deck longitudinal
Hatch side coaming
Topside tank transverse web frame
Topside tank plating vertical strake
Topside tank
Topside tank sloping plating
Side shell longitudinal
Topside tank sloping plating longitudinal
Bracket
Cargo hold
Side shell plating
Side shell frame (Hold frame)
Bracket
Hopper transverse web frame
Hopper tank sloping
Hopper tank sloping plating longitudinal
Double bottom tank
Bottom centre girder
Bottom side girder
Inner bottom plating (Tank top)
Side shell longitudinal
Inner bottom longitudinal
Bilge plating
Bilge keel
Bottom longitudinal
Bottom shell plating
Floor
Keel plate
Hopper tank


Hatch side coaming
Deck plating
Deck longitudinal
Topside tank transverse web frame
Topside tank plating vertical strake
Topside tank
Side shell longitudinal
Topside tank sloping plating
Topside tank sloping plating longitudinal
Cargo Hold
Inner bulkhead plating
Side shell plating
Hopper tank sloping
Side shell longitudinal
Inner bottom plating
Hopper tank sloping plating longitudinal
Hopper transverse web frame
Inner bottom longitudinal
Double bottom tank
Bottom girder
Bilge plating
Duck Keel
Keel plate
Floor
Bottom shell plating
Bottom longitudinal
Hopper tank



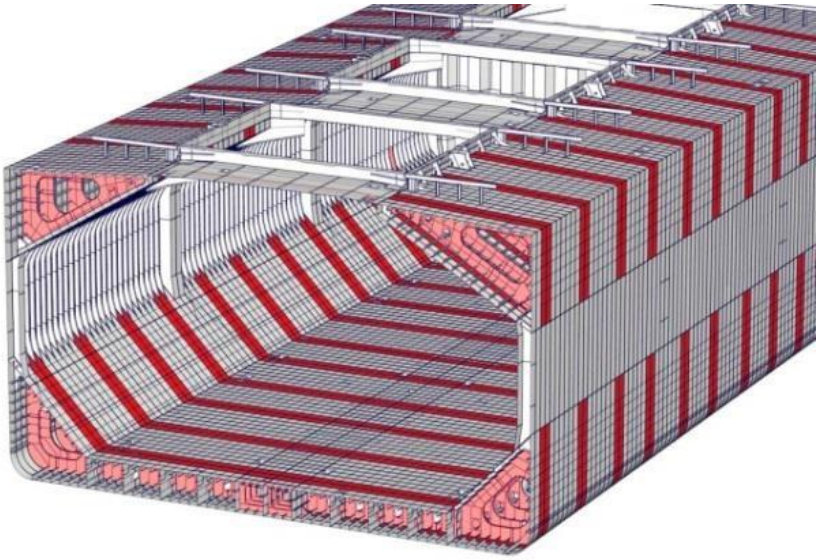
(7) Diagrams for scope of typical close-up inspection:

① When a special survey No.2 is carried out for single-side skin bulk carrier less than 100,000DWT (5 < age ⩽ 10), all shell frames in the forward cargo hold and 25% frames in each of the remaining cargo holds, including upper and lower end attachments and adjacent shell plating may refer to the following:

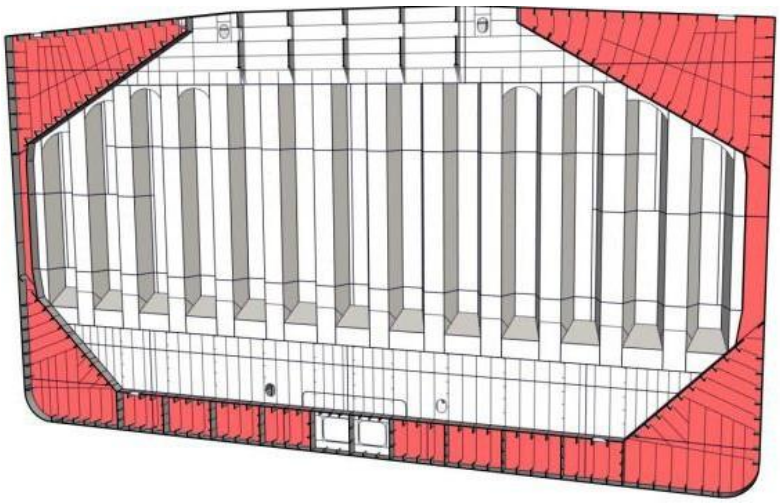


② When a special survey No.3 is carried out for single-side skin bulk carrier (10 < age ⩽ 15), all transverse webs with associated plating and framing in each

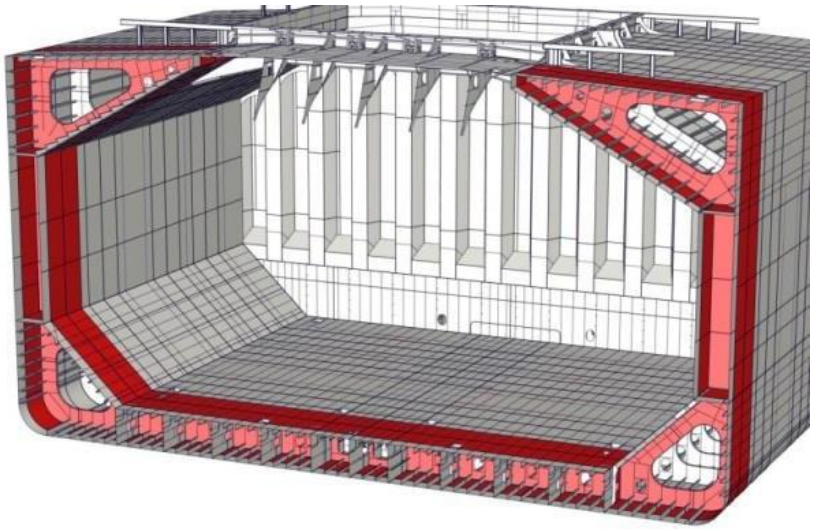
water ballast tank may refer to the following:



③ When a special survey is carried out No.3 for single-side skin bulk carrier (10 < age ≤ 15), all transverse bulkheads in ballast tanks, including stiffening system may refer to the following:



④ When a special survey No.2 is carried out for double skin bulk carrier (5 < age ≤ 10), if applicable, one transverse web with associated plating and longitudinals in each water ballast tank may refer to the following:



⑤ Further detailed guidance, refer to the "Guidelines for Hull Thickness Measurement" issued by ISC.

Key points:

(1) Fill in "X" for the applicable inspection method, and multiple methods may be filled for the same structure. Please refer to the Appendix of this Guidelines for details.

(2) For bulk carriers of 20,000 gross tons and above with keel laid after 1st January, 2005, the Structure Access Manual (PMA) is to be held, and the inspection method for the cargo hold and ballast tank is to include permanent means of access.

(3) For the use of RIT with the consent of the flag State, if drone is used, it may be filled in as "Drone"; if climber is used (commonly known as spiderman), it may be filled in as "Climbers"; or other English abbreviations mentioned in Attentions (5).

History of cargoes

Record the history of bulk cargoes of a corrosive nature (e.g. high sulphur content).

Attentions: When bulk cargo with high sulfur content (such as sulfur) is carried, corrosion to inner bottom plate and bulkhead is very easy. Record the similar loading history in the last three years. Example: carried sulphur UN no.1350 from Indonesia to China for 1806 voyage in July, 2018.

3 Shipowner's inspection

Shipowners are to fill in the following table and provide the inspection results for the last three years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Hold / Tank No.	Corrosion protection ①					Coating extent ②				Coating condition ③				Structural deterioration ④	Hold and tank history ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo holds																	
Topside tanks																	
Hopper tanks																	
Double side skin tanks																	
Double bottom tanks																	
Upper stools																	
Lower stools																	
Wing tanks（ore carrier）																	
Fore peak																	
Aft peak																	
Other spaces																	

Abbreviation:

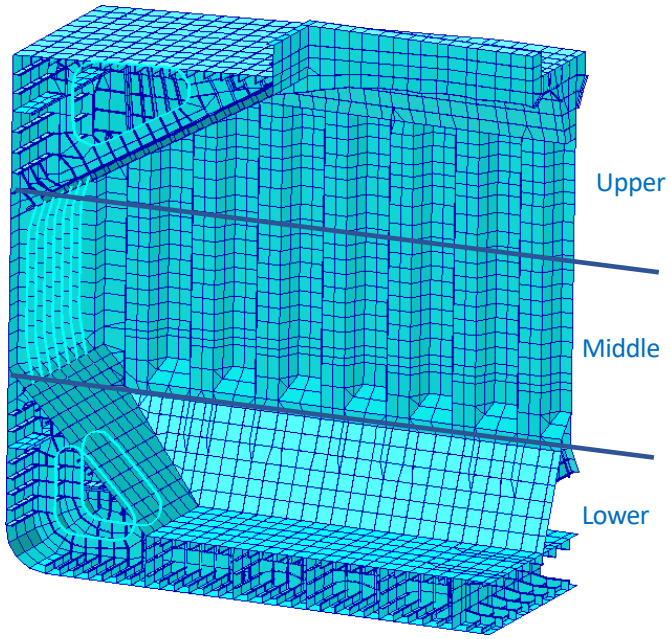
① HC = hard coating[①]
SC = soft coating[②]
SH = semi-hard coating [③]
A = sacrificial node
NP = no protection

① A full hard protective coating is usually to be epoxy coating or equivalent . Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specifications.

② A soft coating is to keep soft and will be worn due to mild mechanical impact or touch. This coating is usually based on oil (vegetable or petroleum) or lanolin. The application of soft coating is not to allow relaxation of the scope of periodic hull survey requirements for ballast tanks.

③ Semi-hard coating, which the hardness allows to be touched and walked on, but remains elastic after drying or changing. For ships with semi-hard coating applied in ballast tanks, the annual survey of ballast tanks is to be carried out from the due date of the special survey No.1 or intermediate survey on or after 1st July 2010, whichever is earlier.

② U = upper M = middle L = lower C = complete (refer to the following)



③ G = good F = fair P = poor RC = recoated (during the last 3 years

④ N = no finding recorded
Y = finding recorded (Description of findings is to be attached to this questionnaire)

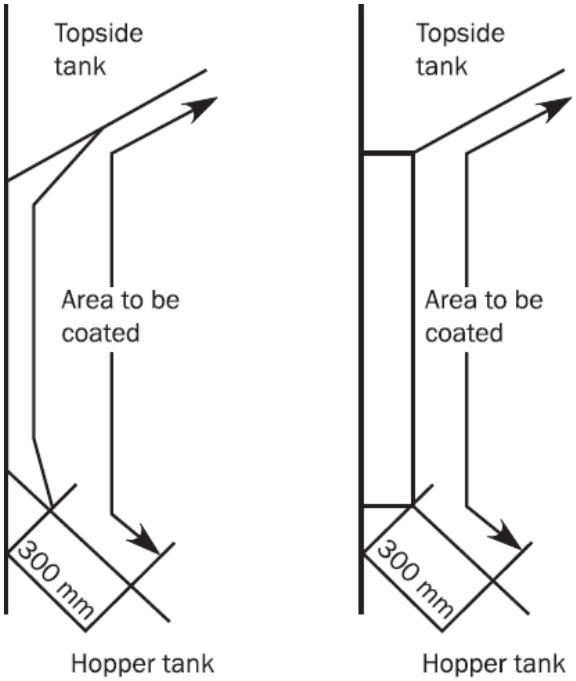
⑤ DR = damage and repair L = leakages
CV = conversion (Description of findings is to be attached to this questionnaire)

Key points:

(1) For PSPC ships, HC-B (applicable to dedicated ballast tank), HC-D (applicable to double-side spaces of double skin bulk carrier) and HC-V (applicable to void space) may be filled in HC column according to the notation in classification certificate. HC-N may be filled in for non PSPC ships or holds/tanks not protected by PSPC.

(2) In the other place other than HC column, mark with "X", if applicable. Focus on the latest inspection results.

(3) According to the requirements of IACS UR Z9, the protective coating area in cargo hold of bulk carrier does not include the inner bottom plating and hopper slopping plating from about 300mm below the lower bracket toe end of side frame to the inner bottom margin (may refer to the following figure). In principle, only U and M can be selected; for the cargo hold with complete coating, C is to be selected.



(4) Where significant corrosion or structural deformation is found in the hold / tank, the corresponding position in column ④ is to be marked as "Y", and the corresponding position in column ⑤ is to be marked as appropriate. At the same time, the shipowner is to attach a detailed description to the questionnaire; otherwise, please mark it as "N".

(5) Where any damage, repair, leakage or conversion history of the hold / tank inspected is found, it is to be marked with "X" at the corresponding position in column ⑤, and at the same time, the shipowner is to attach a detailed description to the questionnaire.

Name of the representative of shipowner
(Name in Chinese Pinyin / English)
Signature:
Date:

*Attentions:*Due to the update of the survey programme (Form ESP-BC), the signing position has been adjusted to here, and attention is to be paid not to omit. The questionnaire is to be signed by the person responsible for ship's survey, usually the maintenance supervisor. In principle, the date is to be three months before the commencement of the survey, and note that the date of signing is to be earlier than the endorsement date of the survey programme.

4 Reports of port State Control inspection

Check the PSC inspection report onboard the ship since the last ESP survey up to now (usually for ships with the age less than 10 years, the report is to be retained onboard within the interval of the first special survey and the interval between special survey No.1 and No.2; for ships with the age over 10 years, within the interval between special survey and intermediate survey). Where deficiencies related to the hull structure are found in the survey results, the relevant information is to be listed in this part, including a brief description of the hull structure deficiencies and the corrective measures related to.

Key points: two methods may be used, one is to fill in PSC deficiencies, and another is to point to the PSC report.

(1) Where the first method is used, the date of PSC inspection, port of inspection, ship detained, description of hull structural related deficiencies and description of deficiencies rectification are to be filled in, of which the description of deficiencies is to include the position, type (corrosion/crack/deformation) and extent as far as possible. For example:

Date of Inspection	Port of Inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
dd/mm /yyyy	XX port, XX country	Yes	No.4 cargo hatch end beam to topside tank port and STBD forward and STBD aft, No.5 cargo hatch end beam to topside tank port and STBD forward heavily corroded and cracked.	The cracked hatch end beam renewed.

(2) Where the second method is used, the date of PSC inspection, port of inspection, number PSC report to raise deficiencies and rectification are to be filled in, and a copy of relevant PSC report is to be attached to the questionnaire.

5 Safety Management System

Check the non-conformities related to hull structure maintenance found by ISM audits since the last ESP inspection up to now (usually for ships with the age less than 10 years, the report is to be retained onboard within the interval of the first special survey and the interval between special survey No.1 and No.2; for ships with the age over 10 years, within the interval between special survey and intermediate survey), relevant information is to be listed in this part, including a brief description of the hull structure deficiencies and the corrective measures related to.

Key points: fill in the non-conformities and corrective measures related to structure maintenance and the main contents are as followings:

(1) Description of non-conformities: fill in in accordance with the NC report;

(2) Unit raising the non-conformities: i.e.: classification society (ISC or other RO), flag State,

company (internal audit), etc.;

(3) Corrective measures: fill in in accordance with the NC report;

(4) Date of correction: fill in the date of correction for non-conformities which have been confirmed by the audited unit;

(5) For example:

Description of hull structural related non-conformities	non-conformities given by	Corrective actions	Date of Verification
No evidence showing No.1 topside tank (P) internal inspection and maintenance as necessary completed by the crew since mm/yy, not in compliance with company's SMS (XX).	LR	Internal inspection and maintenance as necessary of No.1 topside tank (P) to be arranged as soon as possible.	dd/mm/yyyy

6 Thickness measurement firm information

Key points: When carrying out the survey with thickness measurement requirements, a thickness measurement firm approved or accepted by ISC is to be designated. Fill in according to the actual situation. In view of the fact that the shipowner may not determine which thickness measurement firm to select when the survey programme is prepared, it is recommended to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm, which will be supplemented or modified during the inspection. Any change of the firm before the inspection may be modified. It may not be filled if the thickness measurement is not required for special survey No.1 of bulk carrier. It is necessary to designate a thickness measurement firm approved or accepted by ISC, of which the relevant information can be obtained by entering ISC website (https://www.isclass.com) for inquiry.

Section 2 Survey Programme

Cover

Basic information and particulars

(For ship's name, IMO number, flag State, port of registry, owner, recognized organization (RO), gross tonnage, deadweight (metric tonnes) and date of build of the ship, please refer to 1 Ship Information, Section 1, Chapter 2.)

Kind of Survey: No. x Special Survey or Intermediate Survey in scope of No. x Special Survey

Attention:

(1) For each special survey of ESP ship, survey programme is to be prepared in advance (including first special survey (ship age≤5)). The requirements for intermediate survey of hull parts of ships with age not less than 10 years are the same as the scope of last special survey.

(2) Special periodical survey of ESP ships flying the flag of China is to be filled in as according to the scope of last special survey. According to order No.16 of 2017 from Ministry of Transport of China, i.e. provisions relating to revising Provisions for Managing Old Vessels by Ministry of Transport, for bulk carriers and ore carriers over 28 years of age, special periodical survey is to be carried out each year.

Length between perpendiculars (m)

Length between perpendiculars (m) can be filled in with reference to parameters in approved main drawings of ship (e.g. general arrangement plan or basic structure plan) or survey status released by ISC, and in general, two numbers are kept after the decimal point.

Shipbuilder

Shipbuilder is to be filled in according to the contents in Classification Certificate.

Hull No.

Hull No. for newbuildings can usually be found in documents such as Shipbuilding Contract, Loading Manual or detailed record of cargo ship equipment safety (Yard No.), etc.

Class No.

Class No. is the registration No. granted by ISC and can be found in Classification Certificate or survey status released by ISC.

Class Character and Notations of Hull

Class character and notations of hull are to be filled in according to the contents in Classification Certificate.

Thickness measurement firm

Thickness measurement firm is to be filled in according to actual condition. Considering the condition that the shipowner may not decide to choose which thickness measurement firm, if the thickness measurement firm is not decided, it is recommended to fill in "—" or "will be advised at the time of survey" or the name of a thickness measurement firm for the time being to be supplemented or revised during survey. If thickness measurement firm is changed, revision may be made after change.

Contents

Attention: When using Office Word software to prepare survey programme, please right-click to perform "update domain" operation on the contents and select "update page number only" in

the pop-up dialogue box after final completion to confirm that the page number of final survey programme is the same as that in the contents.

Survey programme text

1 Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurement and pressure testing within the cargo length area, cargo holds, ballast tanks, including fore and aft peak tanks, required by 2011 ESP Code and Section 7, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

1.1.2 The arrangements and safety aspects of the survey are to be acceptable to the attending surveyor(s).

1.2 Documentation

All documents used in the preparation of the survey programme are to be available onboard during the survey as required by 5.1.6.5(2)①, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

*Attention:*Before compiling the text, attention is to be paid for filling in ship name and ship registration No. in page header.

2 Arrangement of cargo holds, tanks and spaces

This section of the survey programme is to provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

Key points:

(1) At least the cabin within survey scope is to be indicated, and drawings and verbal form are optional, but no matter which method is adopted, name and location are to be clearly stated.

(2) It is recommended to insert cabin capacity plan or general arrangement plan here, and the cabin/space in the plan is to be clear and complete.

(3) If it is explained in verbal form, at least cabin/space name, location (left/right) and frame No. are to be included, e.g. No.1 T.S.B.W.T.(P), Fr.Nos.267-279.

3 List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme is to indicate any changes relating to (and is to update) the information on the use of the hodls and tanks of the ship, the extent of coatings and the corrosion protective system provided in the Survey Planning Questionnaire set out in Appendix 2 of this programme.

Attention: This section is to be completed only when the questionnaire is changed or updated, otherwise, leave the form blank.

4 Conditions for survey

This section of the survey programme is to provide information on the conditions for survey, e.g. information regarding cargo hold and tank cleaning, gas freeing, ventilation, lighting, etc.

Attention: The shipowners are required to pay attention to the implementation of relevant

requirements in 5.1.6.1, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, in particular:

(1) To facilitate survey by the attending surveyor, the shipowner and ISC are to agree on suitable and safe access provisions which meet relevant requirements of Resolution A.1050(27) Revised Recommendations on Entering Enclosed Spaces Onboard Ship. At the same time, reference may be made to ISC current Guidelines for Safety of Survey Location and IACS Recommendation No. 72 Safety Measures for Enclosed Spaces.

(2) Tanks and spaces are to be safe for access. Tanks and spaces are to be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it is to be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen[1].

(3) In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces are to be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces are to be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration, as well as the condition of the coating. Sufficient illumination is to be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration, as well as the condition of the coating.

5 Provisions and method of access to structures

This section of the survey programme is to indicate any changes relating to (and is to update) the information on the provisions and methods of access to structures provided in the Survey Planning Questionnaire set out in Appendix 2 of this programme.

Attention: This section is to be completed only when the questionnaire is changed or updated, otherwise, leave the form blank.

6 List of equipment for survey

This section of the survey programme is to identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

Attention: The shipowners are required to pay attention to the implementation of relevant requirements in 5.1.6.3, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, in particular:

(1) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

① radiographic equipment;

② ultrasonic equipment;

③ magnetic particle equipment;

④ dye penetrant.

(2) In addition, the following are to be complied with:

① explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use are to be made available during the survey. A safety checklist is to be provided;

[1] According to the requirements of IACS PR37, oxygen content between 20.6% and 22% is deemed as safe.

② adequate and safe lighting is to be provided for the safe and efficient conduct of the survey;
③ adequate protective clothing is to be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7 Survey requirements

7.1 Overall survey

This section of the survey programme is to identify and list the spaces that are to undergo an overall survey for this ship in accordance with Sections 7, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, i.e. an overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey within the scope of special survey, including cargo holds, cofferdams, pipe tunnels, double side tanks (if fitted) within the cargo length area, void spaces bounding cargo holds, fuel tanks and all ballast tanks. The internal examination of fuel tank within the cargo length area is to be carried out according to the provisions of Table 5.4.4.2(2), Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

Attention:

(1) According to the definition in 5.1.5.1(11), Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, an overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

(2) For the intermediate survey carried out according to the scope of last special survey, internal examination of fuel tanks is not required unless deemed necessary by the attending Surveyor.

Key points: item (1) is cargo hold, item (2) is ballast tank, item (3) is fuel tank, item (4) is lube oil tank, item (5) is fresh water tank. If all cabins are to be examined, all space name and frame No. may be listed, or “All cargo holds” and “All ballast tanks” can be filled in directly. For the condition that only part of cabins are to be subject to internal examination, e.g. internal examination of fuel tanks of ships of different age, reference can be made to ISC Rules for Classification of Seagoing Steel Ships, i.e. space name and frame No. may not be specified, such as “One Fuel oil bunker tank in Cargo length area”. Because internal examination of fuel tank involves cleaning, ventilation and other work that need to be prepared in advance, it is recommended to fill in the cabin to be examined. For item (6) Other Tanks/ Spaces, it is to be filled in with spaces except in above (1) to (5) but not limited to pipe tunnel, void space and LNG READY space of VLOC。For tank/space outside cargo length area, it is not necessary to fill in.

7.2 Close-up survey

This section of the survey programme is to identify and list the hull structures that are to undergo a close-up survey for this ship in accordance with Section 7, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

Attention: The Surveyor may extend the close-up survey as deemed necessary taking into account the maintenance of the tanks under survey, the condition of the corrosion prevention system and also in the following cases. For areas in tanks where hard protective coatings are found to be in a GOOD condition, the extent of close-up surveys may be specially considered.

Key points: Except in special cases, reference may be made with the contents in Table “Minimum Requirements for Close-up Survey” in ISC Rules for Classification of Seagoing

Steel Ships. Specific cabin and location are to be determined by both shipowner and attending Surveyor, and may not be specified in survey programme. For example, for second special survey of certain 57,000 DWT single side skin bulk carrier, it may be filled in with:
A) All shell frames in the forward cargo hold and 25% of shell frames in each of the remaining cargo holds, including upper and lower end attachments and adjacent shell plating.
B) One transverse web with associated plating and longitudinals in each water ballast tank.
B) Forward and aft transverse bulkhead in one ballast tank, including stiffening system.
C) All cargo hold transverse bulkheads, including internal structure of upper and lower stools.
D) All cargo hold hatch covers and coamings (plating and stiffeners).
E) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.
For the scope of close-up survey to be extended as deemed necessary by the Surveyor, following may be added:The Surveyor extends the close-up survey as follows: the inner bottom plating of No.3 cargo hold.

8 Identification of tanks for tank testing

This section of the survey programme is to identify and list the cargo holds and tanks that are to undergo tank testing for this ship in accordance with Section 7, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

Attention:

(1) All boundaries of water ballast tanks, deep tanks and cargo holds used for water ballast within the cargo length area are to be pressure tested. For fuel oil tanks, only representative tanks are to be pressure tested. Tank testing of fuel oil tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.

(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the inner bottom plate/top plate is carried out.

(3) For the intermediate survey carried out according to the scope of last special survey, pressure testing of all tanks is not required unless deemed necessary by the attending Surveyor.

Key points: All space name may be listed, or “All ballast tanks” can be filled in directly. For tanks outside cargo length area, it is not necessary to fill in.

9 Identification of areas and sections for thickness measurements

This section of the survey programme is to identify and list the areas and sections where thickness measurements are to be taken in accordance with Section 7, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships.

Key points: Except in special cases, reference may be made with the contents in Table “Minimum Requirements for Thickness Measurement” in ISC Rules for Classification of Seagoing Steel Ships. Specific location is to be determined by both shipowner and attending Surveyor, and may not be specified in survey programme. For example, for second special survey of certain VLOC, it may be filled in with:
1) Within the cargo length, two transverse section of deck plating outside line of cargo hatch

openings.
2) Wind and water strakes in way of the two transverse sections considered above and selected wind and water strakes outside the cargo length area.
3) Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:
A) All web frame rings complete including adjacent structural members in a ballast wing tank.
B) One deck transverse including adjacent deck structural members in each remaining ballast tank.
C) Forward and aft transverse bulkheads complete, including girder system and adjacent structural members in a ballast wing tank.
D) One transverse bulkhead lower part, including girder system and adjacent structural members in each remaining ballast tank.
E) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools, where fitted.
F) All cargo hold hatch covers and coamings (plating and stiffeners).
G) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.
4) Suspect areas throughout the vessel.

10 Minimum thickness of hull structures

This section of the survey programme is to specify the minimum thickness for hull structures of this ship that are subject to survey, according to (a), (b) or (c) as follows:
(a) determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship (pointing to Appendix 3.1 of the programme);
(b) Table of Minimum Thickness of Hull Structure given in Appendix 3.2 of the programme;
(c) For CSR ships, the renewal thickness of the hull structure elements is to be indicated in the appropriate drawings.
Attention:
(1) For non-CSR bulk carrier and ore carrier, (a) is usually to be selected， and Appendix 1 "Criteria for Renewal of Hull Structural Members ", Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships is adopted, i.e. allowable corrosion given in Appendix 3.1. For CSR bulk carrier, leave it blank.
(2) For some ships which are not constructed under ISC survey, if ISC accepted hull structure corrosion criteria of last classification society during initial classification survey, and the classification society directly gave Table of Minimum Thickness of Hull Structure, (b) is to be selected and it is to be filled in Appendix 3.2. For such condition, Class Memoranda is usually left for corresponding explanation.
(3) According to special provisions of 2.4 and 2.5, Appendix 1, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, i.e. for applicable bulk carriers contracted for construction on or after 1 July 1998 but before 1 April 2006, cargo hold corrugated transverse bulkhead and cargo hold hatch cover; for applicable bulk carriers and ore carriers contracted for construction on or after 1 January 2004, single hatch cover and pontoon hatch cover, hatch coaming, hatch coaming plate and structural corrosion criteria adopt net thickness, and relevant structural net thickness values are determined according

to provisions of Sections 9 and 11, Chapter 9, PART TWO of ISC Rules for Classification of Seagoing Steel Ships. These apply to hull structure of bulk carrier, although most of them adopt conventional percentage corrosion criteria, some of above structure adopt net thickness criteria, and attention is to be paid during survey and thickness measurement.

11 Thickness measurement company

This section of the survey programme is to identify changes, if any, relating to the information on the thickness measurement company provided in the Survey Planning Questionnaire.

12 Damage experience related to the ship

This section of the survey programme is to, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Attention: Typical design damage related to hull, e.g. crack and buckling, is mainly caused by vibration, high stress level or fatigue. The ship areas with high stress and bending moment are generally the area within 0.5L amidships, front bulkhead of engine room and connection of frame and bracket. Other hull defects such as corrosion are related to ship aging and closely associated with corrosion prevention during ship construction and subsequent maintenance during the service life. Corrosion may also lead to cracking and buckling. Locations liable to corrosion such as middle of fore peak tank, lower longitudinal of deck, inner bottom plate of cargo hold, etc. can be found in survey report (such as Form RA) and ship repair history, and the description of damage location and damage condition is to be filled in the form.

Key points:

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area

Possible cause if known

Description of the damages

Location

Repair

Date of repair

If none, fill in with No damages reported to ISC.

Hull damages for sister or similar ships (if available) in the case of design related damage

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme is to identify and list the areas of substantial corrosion from previous surveys.

Attention:

(1) **Substantial corrosion** is an extent of corrosion such that assessment of corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits. For CSR bulk carriers, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between t_{ren} + 0.5 mm and t_{ren}.

(2) Class Memoranda is usually kept for corresponding explanation, e.g. common inner bottom plate of old ship is described as The inner bottom plating in No.1-3 Cargo holds.

14 Critical structural areas and suspect areas

This section of the survey programme is to identify and list the critical structural areas and the suspect areas, when such information is available.

Attention:

(1) **Critical structural areas** are local locations which have been identified from calculations to require monitoring or from the service history of the similar or sister ships to be sensitive to cracking, buckling, deformation or corrosion which would impair the structural integrity of the ship.

(2) **Suspect areas** are locations showing substantial corrosion and/or are considered by the Surveyor to be prone to rapid wastage.

Key points:

(1) For ships with Structure Access Manual (PMA), attention is to be paid to description relating to critical structural areas in the manual, and/or for ships with class notation of CM, it is to be noted that hull structure construction monitoring plan (CMP) covers critical structural areas that need monitoring during ship in-service survey, and critical structural areas in the manual can be listed directly or pointed directly to relevant manual, e.g. "Refer to approved Structure Access Manual /CMP (Drawing No.xxxxxxxx)".

(2) Whether the ship has the manual mentioned in (1) or not, critical structural areas usually at least cover the contents in following Table and Figure:

Ship type	Area	Critical structural area (Chinese)	Critical structural area (English)
Bulk carrier/ore carrier	Top side tank/bottom side tank/double bottom tank/double side tank	纵骨与横框架/横舱壁连接处	connections of longitudinals to transverse web frames and transverse bulkheads
Bulk carrier	Top side tank	横框架角隅处	corners of transverse web frames
Single-skin bulk carrier	Top side tank/bottom side tank/cargo hold	舷侧肋骨上下端肘板与顶边舱和底边舱连接处，包括顶边舱和底边舱内对应的肘板	connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks
Bulk carrier	Cargo hold	舱口端横梁与顶边舱连接处	connections of hatch end beam to topside tank web frame

Single-skin bulk carrier	Cargo hold/bottom side tank/double bottom tank	内底板与底边舱斜板之间的焊缝或圆弧形折角处，特别是连接的底边舱横框架、双层底纵骨和肋板	welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Bulk carrier/ore carrier	Cargo hold	槽型舱壁、顶/底凳封板与顶/底凳板的连接处	connections of corrugated bulkhead, shelf and stool plating
Bulk carrier/ore carrier	Cargo hold	底凳板与内底连接处	connections of lower stool plating to the inner bottom
Bulk carrier/ore carrier	Main deck	纵向舱口围板端肘板趾端处的腹板或甲板	web or deck at the toes of the longitudinal hatch coaming termination bracket
Bulk carrier/ore carrier	Main deck	舱口角隅	hatch corners
Bulk carrier/ore carrier	Top side tank/bottom side tank/double bottom tank/double side tank	与加热燃油舱相邻的横舱壁和扶强材（如有）	transverse bulkhead adjacent to heated fuel oil tank (if fitted)
Ore carrier	Side tank	主甲板与舷顶列板（纵舱壁板）连接处的甲板横材	connections of deck transverse in way of sheer strake and longitudinal bulkhead top strake
Ore carrier	Side tank	横撑材和肋板角隅处	corners of cross ties and floors

Ore carrier	Side tank	横舱壁水平桁与舷侧纵骨连接处	connection of horizontal stringer on transverse bulkhead and side shell longitudinal
Ore carrier	Cargo hold/side tank	内底板和纵舱壁底列板连接处，特别是连接的纵舱壁腹板、双层底旁纵桁和肋板	connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors
Ore carrier	Cargo hold	甲板横梁与甲板纵桁连接处	connections of deck transverses to deck girders
Ore carrier	Cargo hold	甲板纵桁与舱口端横梁连接处	connections of deck girders to hatch end beam
Ore carrier	Cargo hold	顶凳边板与甲板连接处	connections of the upper stool sloping plating to the deck plating

Typical critical structural area of bulk carrier

1 Top side tank/bottom side tank/double bottom tank/double side tank

Connections of longitudinals to transverse web frames and transverse bulkheads

2 Top side tank

Corners of transverse web frames

3 Top side tank/bottom side tank/cargo hold

Connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks

4 Cargo hold

Connections of hatch end beam to topside tank web frame

5 Cargo hold/bottom side tank/double bottom tank

Welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors

6 Cargo hold

Connections of corrugated bulkhead, shelf and stool plating

7 Cargo hold

Connections of lower stool plating to the inner bottom

8 Main deck

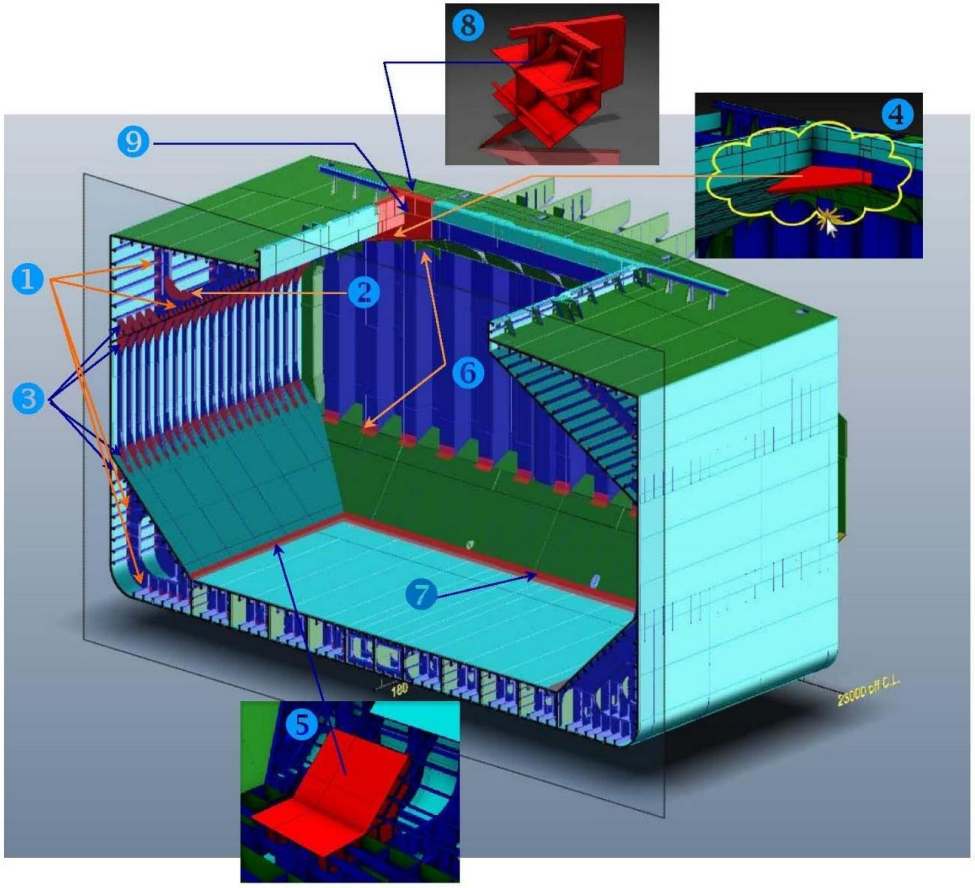
Web or deck at the toes of the longitudinal hatch coaming termination bracket

9 Main deck

Hatch corners

10 Top side tank/bottom side tank/double bottom tank/double side tank

Transverse bulkhead adjacent to heated fuel oil tank (if fitted)



Typical critical structural area of ore carrier

1 Top side tank/bottom side tank/double bottom tank/double side tank

Connections of longitudinals to transverse web frames and transverse bulkheads

2 Cargo hold

Connections of corrugated bulkhead, shelf and stool plating

3 Cargo hold

Connections of lower stool plating to the inner bottom

4 Main deck

Web or deck at the toes of the longitudinal hatch coaming termination bracket

5 Main deck

Hatch corners

6 Top side tank/bottom side tank/double bottom tank/double side tank

Transverse bulkhead adjacent to heated fuel oil tank (if fitted)

7 Side tank

Connection of deck transverse in way of sheer strake and longitudinal bulkhead top strake

8 Side tank

Corners of cross ties and floors

9 Side tank

Connection of horizontal stringer on transverse bulkhead and side shell longitudinal

10 Cargo hold/side tank

Connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors

11 Cargo hold

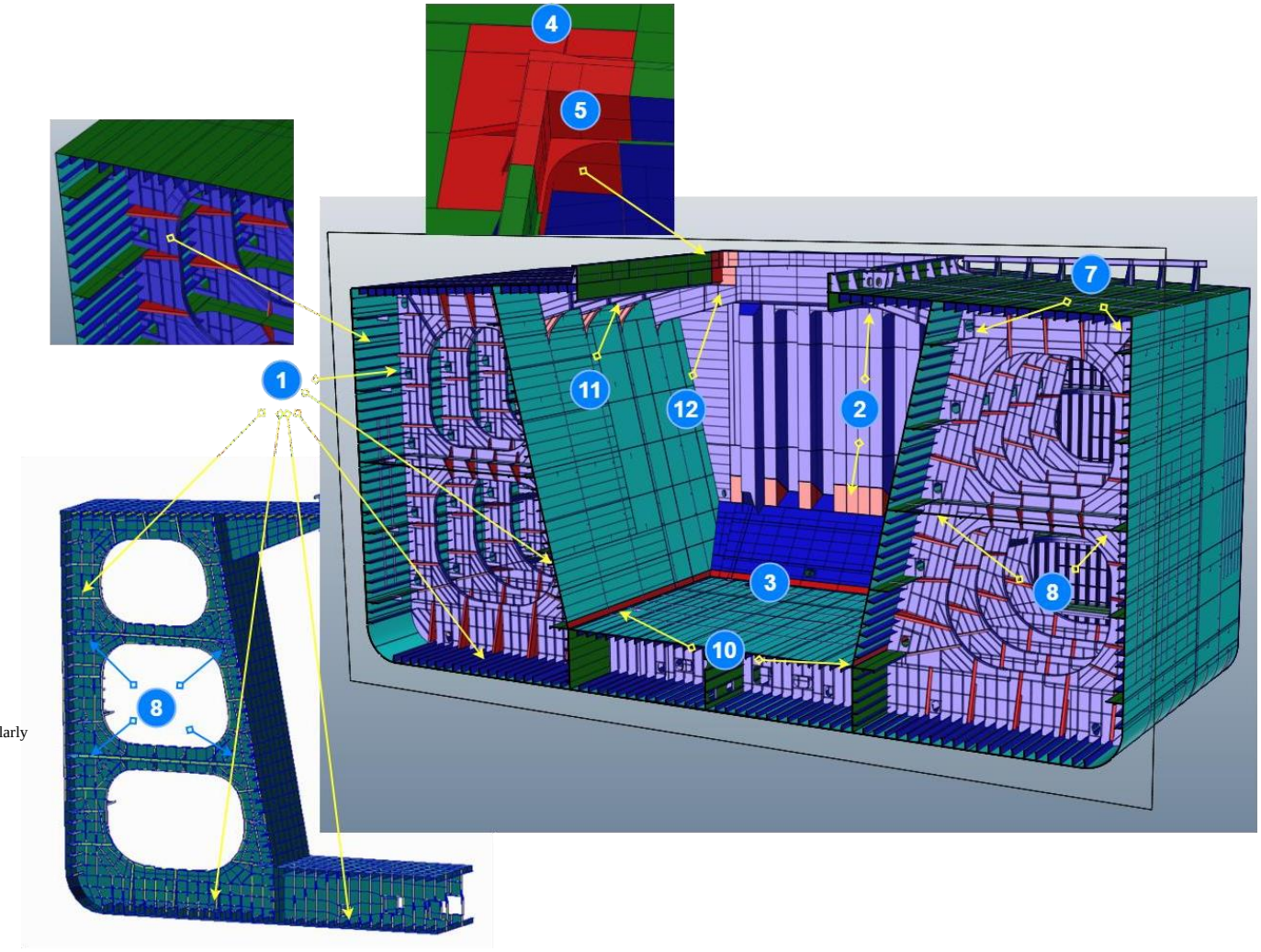
Connections of deck transverses to deck girders

12 Cargo hold

Connections of deck girders to hatch end beam

13 Cargo hold

Connections of the upper stool sloping plating to the deck plating



(3) When applicable, attention is to be paid to collect special critical structural areas identified as a result of design defects found in this ship or sister ships or similar ships.

15 Other relevant comments and information

This section of the survey programme is to provide any other comments and information relevant to the survey.

Key points: If none, Nil will be filled in.

Appendices

Appendix 1 List of plans

5.1.6.5(3), Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships requires that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS) are to be available.

This Appendix of the survey programme is to identify and list the main structural plans which form part of the survey programme.

Appendix 1.1 Main structural drawings of cargo holds and ballast tanks

Key points: This section has described plans of transverse midship section, construction profile, shell expansion, transverse bulkhead, bow structure and stern structure, and plan name of real ship is to be filled in. For main structure plans which reflect cargo hold and ballast tank more, including information on the use of high strength steel, it is to be listed. Most of them are hull structure plans used by surveyor and thickness measurement company during close-up survey and thickness measurement.

Appendix 1.2 Other relevant plans

Key points: This section has described plans of general arrangement and capacity, if there are other documents and plans which contribute to survey, it is to be listed。

Appendix 2 Survey Planning Questionnaire

The Survey Planning Questionnaire which has been submitted by the owner, is to be appended to the survey programme.

Appendix 3 Other documentation

This part of the survey programme is to identify and list any other documentation that forms part of the plan.

Appendix 3.1 Allowable corrosion

Appendix 3.2 Table of minimum thickness of hull structure

Key points: For non-CSR bulk carriers and ore carriers, selection is to be made between 3.1 and 3.2. For details, see explanation in above item 10 “Filling in minimum thickness of hull”, and it is required to correspond with item 10.

Prepared by the owner in co-operation with ISC.

Date: .....(name and signature of authorized owner‘s representative)

Date: .....(name and signature of ISC Surveyor)

Key points: Because survey programme (Form ESP-BC) is updated, signature position is adjusted to here, and attention is to be paid not to omit. The survey programme is to be signed

by the personnel responsible for ship inspection, i.e. usually maintenance supervisor. Below is to be signed by the surveyor with ESP qualification. In principle, time here is to be one month prior to the beginning of survey.

Chapter 3 Key Points of Preparation for ESP-T

Section 1 Shipowner Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with ISC to prepare a survey programme complying with the requirements of this Chapter. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, is to provide all information and material required by this Chapter.

Attention:

(1) In principle, the shipowner is to submit Survey Planning Questionnaire to ISC survey unit or client unit under jurisdiction three months prior to the beginning of survey.

(2) The Survey Planning Questionnaire is included in Appendix 2 of Form ESP-T (Appendix 2, pages 13 to 16 of blank template).

(3) This Chapter applies to filling reference for oil tankers (including VLCC, integral tank petroleum asphalt ship), chemical tankers and oil chemical tankers, etc.

1 Particulars

Ship's name

Ship's name is to be filled in according to ship registry certificate.

IMO number

IMO number is to be filled in according to ship registry certificate.

Flag State

Flag State is to be consistent with that in ship registry certificate.

Port of registry

Port of registry is to be filled in according to ship registry certificate.

Owner

Owner is ship owner and to be consistent with that in ship registry certificate.

Recognized organization (RO)

Recognized organization is International Ship Classification.

Gross tonnage

Gross tonnage is to be filled in according to the data in International Tonnage Certificate (1969), and it is to be noted that gross tonnage is only a number without unit.

Deadweight (metric tonnes)

Deadweight (metric tonnes) can be found in Cargo Ship Safety Construction Certificate.

Date of build

Date of build is date of completing ship construction survey, and can be filled in with reference to classification certificate.

2 Information on access provision for close-up surveys and thickness measurement

The owner is to make clear arrangements for the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally

within reach of hand.

Hold/Tank name	Structure	C(cargo hold) B(ballast tank)	Permanent means of access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
Fore peak tank	Fore peak							
Aft peak tank	Aft peak							
Wing tank	Under deck							
	Side shell							
	Bottom transverse							
	Longitudinal							
	Transverse							
Center tank	Under deck							
	Bottom transverse							
	Transverse							

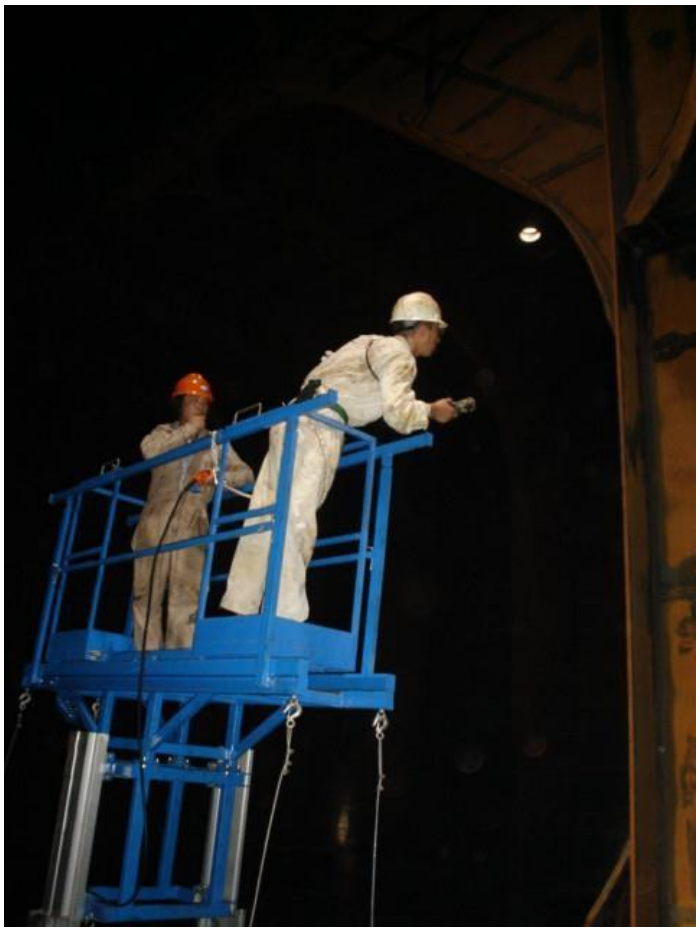
Attention: The owners are invited to pay attention to the implementation of relevant requirements of 5.1.6.2, Chapter 5, PART ONE of ISC Rules for Classification of Seagoing Steel Ships, in particular:

(1) For survey of all ships in cargo holds and ballast tanks, and for close-up survey of hull structure of oil tankers and chemical tankers, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

① Permanent staging and passages through structures;

② Temporary staging and passages through structures;

③ Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;



④ Boats or rafts;

⑤ Portable ladders;

⑥ Other equivalent means.

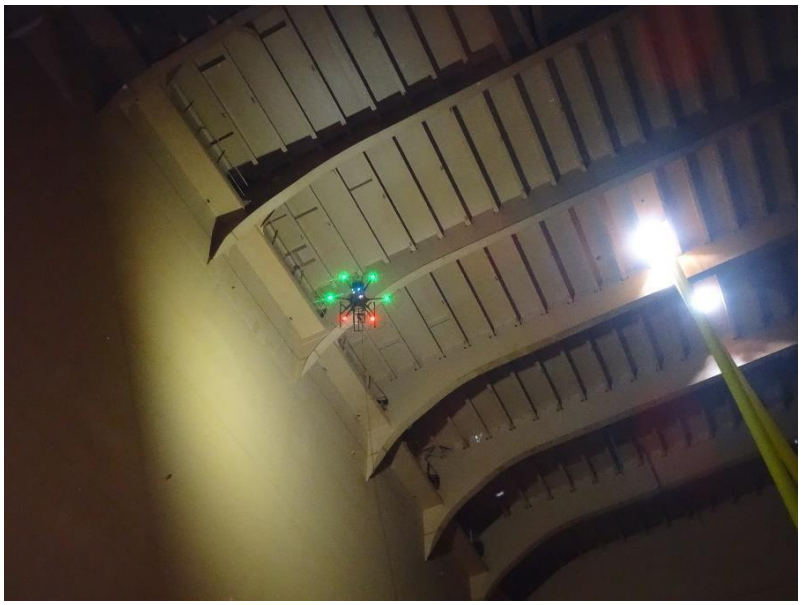
(2) For survey by means of remote inspection technology (RIT) approved or accepted by ISC, one or more of the following means for access, acceptable to the Surveyor, is to be

provided:

① Unmanned Robot Arm (URA);

② Remote Operated Vehicles (ROV);

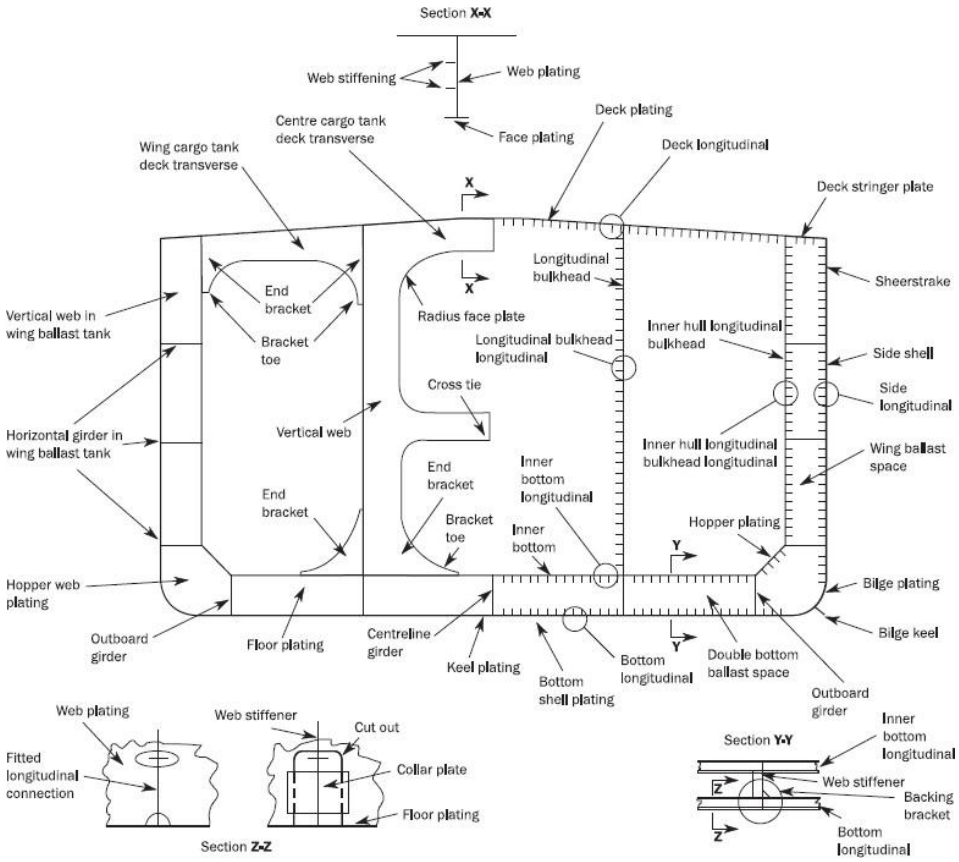
③ Drones;

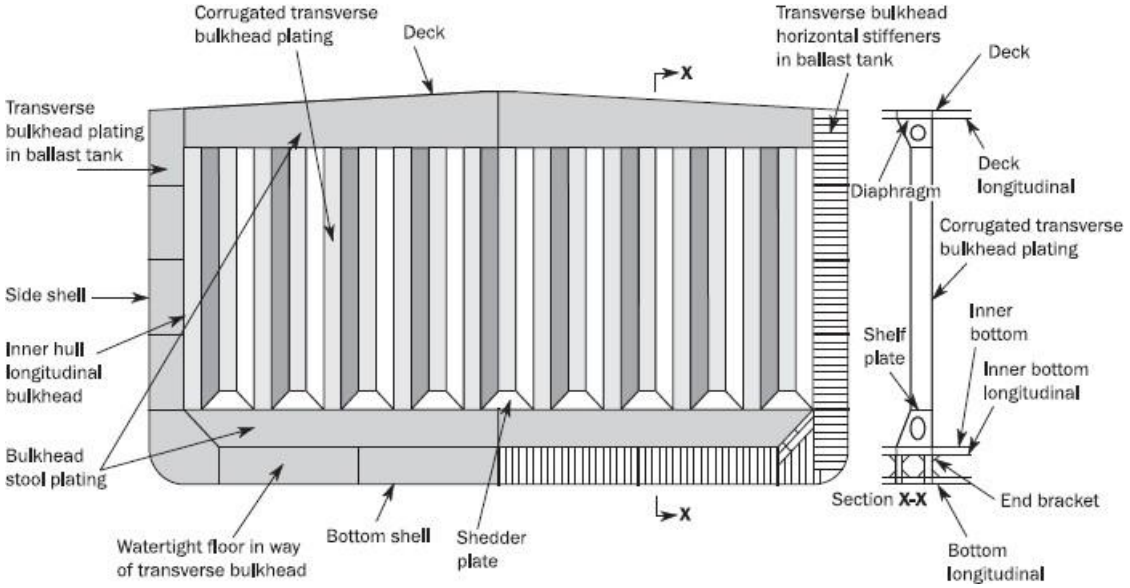


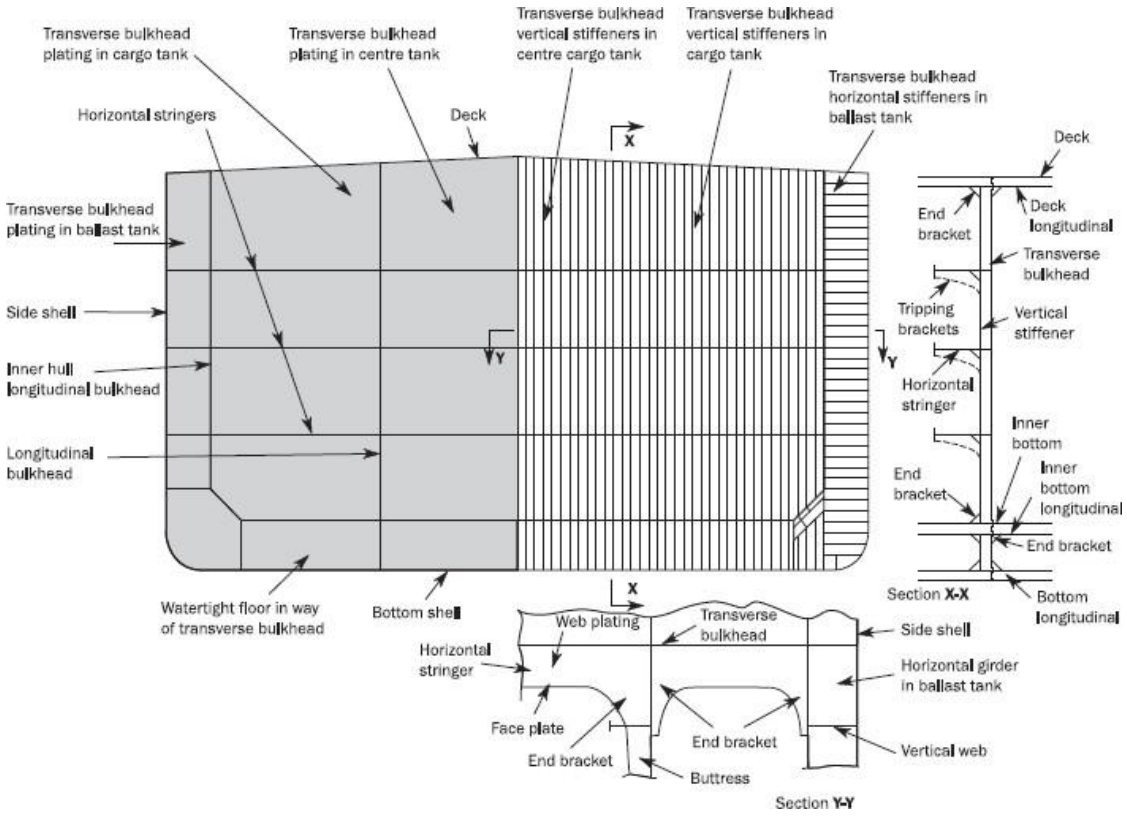
④ Other measures accepted by ISC;

⑤ Although for ESP inspection, RIT technology is not included in IACS UR/UI (except for chemical tankers), ISC may accept it as auxiliary means for close-up survey with the consent of flag State, however, requirements of the flag State are to be satisfied.

（3） For typical terms of transverse section and transverse bulkhead of double hull oil tanker, reference may be made to following Figure:

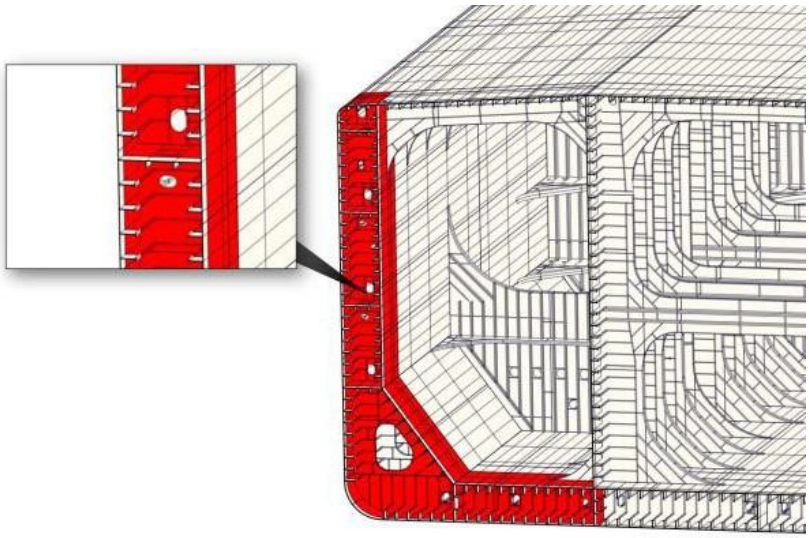

Section X-X
Web stiffening
Web plating
Face plating
Deck plating
Deck longitudinal
Centre cargo tank deck transverse
Wing cargo tank deck transverse
Deck stringer plate
Sheerstrake
Longitudinal bulkhead
End bracket
Bracket toe
Radius face plate
Vertical web in wing ballast tank
Inner hull longitudinal bulkhead
Longitudinal bulkhead longitudinal
Side shell
Cross tie
Side longitudinal
Horizontal girder in wing ballast tank
Vertical web
Inner hull longitudinal bulkhead longitudinal
Wing ballast space
End bracket
Inner bottom longitudinal
End bracket
Bracket toe
Hopper plating
Inner bottom
Hopper web plating
Bilge plating
Outboard girder
Floor plating
Centreline girder
Keel plating
Bottom shell plating
Bottom longitudinal
Double bottom ballast space
Bilge keel
Outboard girder
Web plating
Web stiffener
Cut out
Fitted longitudinal connection
Collar plate
Floor plating
Section Z-Z
Section Y-Y
Inner bottom longitudinal
Web stiffener
Backing bracket
Bottom longitudinal


Corrugated transverse bulkhead plating
Deck
Transverse bulkhead horizontal stiffeners in ballast tank
Deck
Transverse bulkhead plating in ballast tank
Deck longitudinal
Diaphragm
Corrugated transverse bulkhead plating
Side shell
Inner hull longitudinal bulkhead
Shelf plate
Inner bottom
Inner bottom longitudinal
Bulkhead stool plating
Section X-X
End bracket
Watertight floor in way of transverse bulkhead
Bottom shell
Shedder plate
Bottom longitudinal

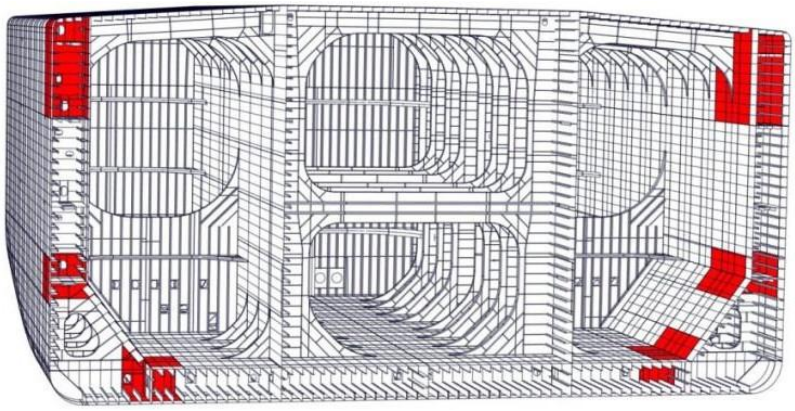


(4) Example of typical close-up survey range

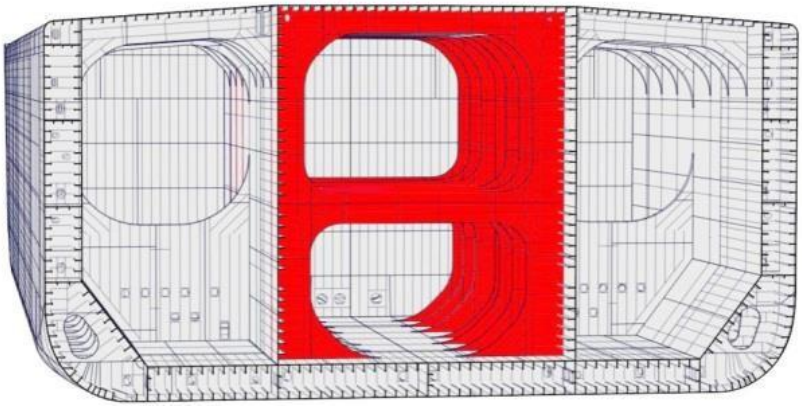
① For first special survey of double hull oil tanker (ship age≤5), one web frame (in a ballast tank) may refer to following figure:



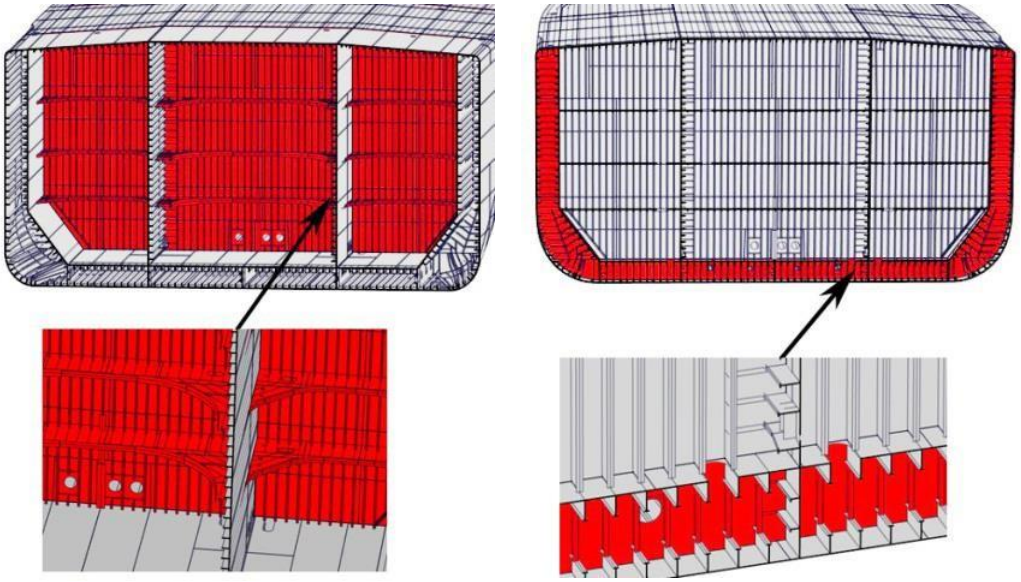
② For second special survey of double hull oil tanker (5<ship age≤10), the knuckle area and the upper part (5 m approximately) of one web frame in each remaining ballast tank may refer to following figure:



③ For third special survey of double hull oil tanker (10<ship age≤15), all web frames (in a cargo oil tank) (including deck transverse and cross ties) may refer to following figure:



④ For third special survey of double hull oil tanker (10<ship age≤15), all transverse bulkheads (in all cargo oil and ballast tanks) may refer to following figure:



⑤ If further detailed guidance is required, reference may be made to Guidelines for Hull Thickness Measurement issued by ISC.

Key points:

(1) For applicable survey method, it is to fill in "X", and for the same structure, it may fill in several methods. For details, refer to Annex of the Guidelines.

(2) For the ship without center tank, if the wing tank is both cargo hold and ballast tank, each method is to be listed respectively for explanation. For details, see Annexes 5 to 7 of the Guidelines.

(3) For oil tankers of 500 gross tonnage and upwards and the keels which were laid after 1 January 2005, if Structure Access Manual is on board ship, survey method for spaces in cargo tank and ballast tank is to include permanent means of access.

(4) If remote inspection technology is used with the consent of flag State and drones are adopted, "Drones" may be filled in last column. If climber (spiderman) is adopted, "Climbers" may be filled in. Or other English abbreviations mentioned in (2) of above attention.

Details of the inert gas plant and tank cleaning procedures

(a) Whether inert gas plant system is provided;

— Details of inert gas plant;

— Identifying average oxygen concentration during inerting;

Key points:

(1) If such system is provided, select ☒ after "Yes", otherwise, select ☒ after "No".

(2) It is to fill in information such as inert gas plant manufacturer, model and type (flue gas inert gas system, inert gas generator, multi-functional inert gas system) and rated capacity (e.g. 500m^3/h).

(3) At present, flue gas inert gas system is often used on large oil tankers, nitrogen generator is often used on chemical tankers, with oxygen content between 4% and 5%, but average oxygen content is to be filled in according to actual condition.

(b) Tank cleaning procedures

i. Identifying tank cleaning frequency (times), especially for tank without coating:

— After unloading:

— Before drydocking;

ii. Washing medium:

— Crude oil:

— Heated seawater:

— Others (please specify):

Key points: select ☒ after "Yes" when applicable.

History of cargoes

For oil tankers, history of cargo with H_2S content or heated cargo for the last 3 months together with indication as to whether cargo was heated and, where available, Marine Safety Data Sheets (MSDS);

For chemical tankers, history of heated cargo for the last 3 years together with indication as to whether cargo was heated.

Attention:

(1) For oil tankers, uniform corrosion and even cracking of cargo oil tank steel structure will

occur due to prolonged exposure to wet hydrogen sulphide, but steam heating of cargo oil tank will also accelerate corrosion. The voyages for the vessels engaged in carrying cargo with H_2S (e.g. crude oil, some refined petroleum products including naphtha, fuel oil, gas oil, etc.) and the voyages requiring steam heating can be recorded as "The vessel engaged in carrying crude oil for the last 3 years and nearly 3~4 voyages each year."

(2) For chemical tankers, cargo heating will also accelerate intercrystalline corrosion of stainless steel structure or have effect on tank coating. It is to be recorded when cargo requiring heating such as paraxylene, phenol and palm oil are carried.

3 Owner's inspections

The owner is to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area using a format and in accordance with the requirements of this Chapter.

Tank/Hold No.	Corrosion protection ①					Coating extent ②				Coating condition ③				Structural deterioration ④	Hold and tank history ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo center tanks																	
Cargo wing tanks																	
Slop tanks																	
Ballast tanks																	
Fore peak tanks																	
Aft peak tanks																	
Other spaces																	

Abbreviation:

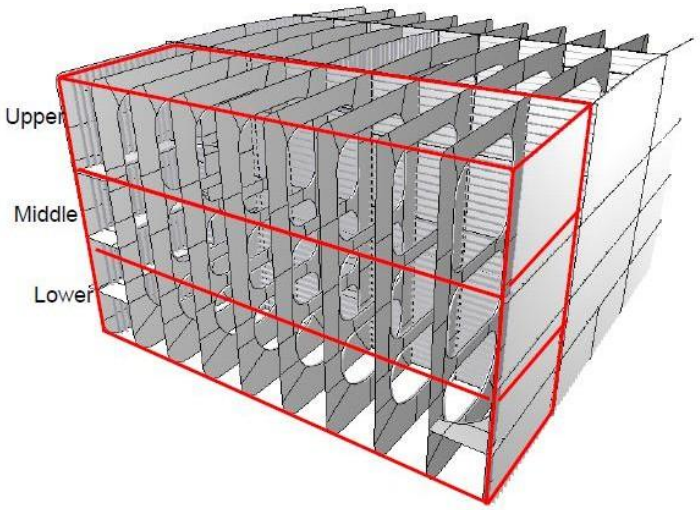
① HC=hard coating[1]; SC=soft coating[2]; SH=semi-hard coating[3]; A=sacrificial anode; NP=no protection

② U=upper part; M=middle part; L=lower part; C=complete (may refer to following figure)

[1] i.e. full hard protective coating, which is usually to be epoxy coating or equivalent. Other coating systems, which are neither soft nor semi-hard coatings, may be considered acceptable as alternatives provided that they are applied and maintained in compliance with the manufacturer's specifications.

[2] Soft coating, which keeps soft and will be worn by light mechanical impact or touch. The coating is often based on oil (vegetable or petroleum) or wool grease, relaxing the requirements for periodical hull inspection of ballast tank is not to be allowed when soft coating is used.

[3] Semi-hard coating, of which the hardness may allow to touch and walk on but elasticity may remain after drying or changing. As for the requirements regarding semi-hard coatings, these coatings, if already applied, will not be accepted from the next special or intermediate survey commenced on or after 1 July 2010, whichever comes first, with respect to waiving the annual internal examination of the ballast tanks.



③ G=good; F=fair; P=poor; RC=recoated (during the last 3 years)

④ N =no findings recorded; Y=findings recorded (Description of findings is to be attached to this questionnaire)

⑤ DR=damage & repair; L=leakages; CV=conversion (Description is to be attached to this questionnaire)

Key points:

(1) For ships adopting PSPC, HC-B (applicable to dedicated ballast tank), HC-C (applicable to cargo oil tank) and HC-V (applicable to void spaces) can be filled in HC column as appropriate according to the class notation in classification certificate, and for non-PSPC ships or tanks not protected by PSPC, HC-N is to be filled in.

(2) Other applicable positions except for HC column in the table are to be identified by "X". Please focus on the most recent inspection result.

(3) If the cargo oil tank of crude oil tanker adopts corrosion protection complying with the requirements of SOLAS Reg. Ⅱ-1/3-11, U and L can only be selected here. For cargo oil tank/liquid cargo tank with complete coating, C is to be selected here.

(4) If there is significant corrosion or structure deformation in the cabin to be examined, "Y" is to be identified in corresponding position of column ④ as well as corresponding position of column ⑤. Meanwhile, detailed description is to be attached to the questionnaire by the shipowner. Otherwise, "N" is to be identified.

(5) If there is damage and repair, leakage or convention history, "X" is to be identified in corresponding position of column⑤. Meanwhile, detailed description is to be attached to the questionnaire by the shipowner.

Name of owner's representative
(Chinese/English name)
Signature:
Date:

Attention: Because survey programme (Form ESP-T) is updated, the signature position is adjusted to here. Please pay attention not to omit. The questionnaire is to be signed by the personnel responsible for ship inspection, usually the maintenance supervisor. In principle, the date is three months before survey, and the signature date here is to be earlier than the

signature date of survey programme.

4 Reports of Port State Control inspections

Check PSC inspection report since last ESP inspection (In general, for ships under 10 years of age, the report is kept on board ship at interval of implementing first special survey and the interval of first and second special survey. For ships above 10 years of age, the report is kept on board ship at interval of special survey and intermediate survey), if defects relating to hull structure is found in inspection result, relevant information is to be listed, including simple description of hull structure defects and relevant corrective measures.

Key points: Two methods may be adopted for filling in, i.e. one is filling in key points of PSC defects, another is pointing to PSC report.

(1) When the first method is adopted, PSC inspection date, inspection location, detention, defect description and rectification conditions are to be filled in the table, among which defect description is to include defect position, type (corrosion/crack/deformation) and degree as far as possible. Following is the example:

Date of Inspection	Port of Inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
dd/mm /yyyy	XX port, XX country	No	No.3 cargo tank port inter bottom plating under suction holed.	The holed inner bottom plating renewed.

(2) When the second method is adopted, PSC inspection date, inspection location and No. of PSC report proposing and rectifying defects are to be filled in the table, and copy of relevant PSC report is to be attached to the questionnaire.

5 Safety Management System

When checking nonconformities relating to hull structure maintenance in ISM audit since last ESP inspection (for ships under 10 years of age, the report is kept on board ship at interval of implementing first special survey and the interval of first and second special survey. For ships above 10 years of age, the report is kept on board ship at interval of special survey and intermediate survey), relevant information is to be listed, including simple description of hull structure defect nonconformities and relevant corrective measures.

Key points: All nonconformities relating to structure maintenance and corrective measures are filled in here, mainly including:

(1) Description of nonconformities: may be filled in according to nonconformity report;

(2) The unit raising nonconformity: classification society (ISC or other RO), flag State, company (during internal audit), etc.;

(3) Corrective measures: to be filled in according to nonconformity report;

(4) Rectification date: to be filled in with nonconformity rectification date confirmed by the audit unit;

(5) Example of filling in:

Description of hull structural related non-conformities	non-conformities given by	Corrective actions	Date of Verification
Obvious rust/corrosion found on main deck under the walk ways of cargo tanks showing the lack of effective maintenance according to company SMS (XX).	LR	Maintenance complying with requirement to be carried out as soon as possible.	dd/mm/yyyy

6 Information of Thickness Measurement Company

Key points: To be filled in according to actual condition. Considering the condition that the shipowner may still not decide to choose which thickness measurement company when preparing this programme, if the thickness measurement company is not decided, it is recommended to fill in "—" or "will be advised at the time of survey" or the name of a thickness measurement company, to be supplemented or revised during inspection. If the thickness company is changed prior to inspection, revision may be made after change. It is required to specify thickness measurement service supplier approved or accepted by ISC, and for relevant information, please enter ISC official website https://www.isclass.com)ai.

Section 2 Survey Programme

Cover page

Basic information and particulars

(For Ship's name, IMO number, Flag State, Port of registry, Owner, Recognized Organization (RO), Gross tonnage, Deadweight (metric tonnage), Date of build of the Ship, etc., please refer to the relevant contents in 1 Particular of ship of Section 1, Chapter 3.)

Kind of Survey: No. x Special Survey or Intermediate Survey in scope of No. x Special Survey

Attentions:

(1) A survey programme is to be prepared in advance for each special survey of ESP ships (including the first special survey (age ≤5 years)). For ships of 10 years and over, the requirements for intermediate survey of hull are the same as those for the last special survey.

(2) The special periodical survey of Chinese ESP ships are to be conducted in accordance with the scope of the previous special survey. According to Decree No .16 of 2017 of the Ministry of Transport of China (Decision of Ministry of Transport on Amending the Regulations on Management of Old Transport Ships), special periodical surveys are to be carried out at annual intervals for oil tankers and chemical tankers over 26 years of age.

Length between perpendiculars (m)

Length between perpendiculars (m): when filling in, the approved main ship drawings such as the parameters on the general arrangement drawing or basic structure drawing can be referred to or the survey status released by ISC can be inquired. Generally, two digits are to be kept after the decimal point.

Shipbuilder

Shipbuilder: fill in according to the contents of the classification certificate.

Hull No.

The hull No. of the ship during construction can usually be found in the relevant information such as the ship construction contract, loading manual or cargo ship equipment safety detailed record (yard No.).

Class No.

Class No.: the registration number granted by ISC, which can be found in the classification certificate or survey status issued by ISC.

Class Character and Notations of Hull

Class Character and Notations of Hull: fill in according to the contents of the classification certificate.

Thickness measurement firm

Thickness measurement firm: fill in according to the actual situation. In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose and the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey. If the thickness measurement firm is changed, it can be revised after the change.

Contents

Attentions: When using the Office Word software to edit this survey programme, right click

"Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final survey programme is consistent with the contents.

Text of survey programme

1 Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks, including fore and aft peak tanks, required by 2011ESP Code and Sections 6 and 8, Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

1.1.2 The arrangements and safety aspects of the survey are to be acceptable to the attending surveyor(s).

1.2 Documentation

All documents used in the development of the survey programme are to be available onboard during the survey as required by 5.1.6.5(2)② of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

Attentions: Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

2 Arrangement of tanks and spaces

This section of the survey programme is to provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

Key points:

(1) At least the tanks within the scope of this survey are to be indicated. Forms of plans or text may be optional, but the name and location are to be clearly expressed in any way.

(2) It is recommended to insert the capacity plan or general arrangement plan here. The tanks/spaces shown in the plan are to be clear and complete.

(3) If the form of text is used, the tank/space name, location (left/right) and frame number are at least to be included, e.g. No.1 T.S.B.W.T.(P), FR.NOs.267-279.

3 Use, extent of coatings and corrosion prevention system of tanks and spaces

This section of the survey programme is to indicate any changes relating to (and is to update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the Survey Planning Questionnaire set out in Appendix 2 of this Programme.

Attentions: This article only needs to be filled in when the questionnaire is changed or updated. Otherwise, please leave the form blank.

4 Conditions for survey

This section of the survey programme is to provide information on the conditions for survey, e.g. information regarding tank cleaning, gas freeing, ventilation, lighting, etc.

Attentions: Shipowners are requested to pay attention to the implementation of the relevant requirements in 5.1.6.1 of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going

Steel Ships, in particular:

(1) In order to enable the attending surveyors to carry out the survey, the owner and ISC are to agree on provisions for proper and safe access to meet the relevant requirements of the Revised Recommendations for Entering Enclosed Spaces Aboard Ships, adopted by Resolution A.1050(27). Reference can also be made to existing ISC Guidelines for Safety of Survey Spaces and IACS Recommendation 72 Safety Measures for Enclosed Spaces.

(2) Tanks and spaces are to be safe for access. Tanks and spaces are to be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it is to be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen[1].

(3) In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces are to be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces are to be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration, as well as the condition of the coating. Sufficient illumination is to be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration, as well as the condition of the coating.

5 Provisions and method of access to structures

This section of the survey programme is to indicate any changes relating to (and is to update) the information on the provisions and methods of access to structures provided in the Survey Planning Questionnaire set out in Appendix 2 of this Programme.

Attentions: This article only needs to be filled in when the questionnaire is changed or updated. Otherwise, please leave the form blank.

6 List of equipment for survey

This section of the survey programme is to identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

Attentions: Shipowners are requested to pay attention to the implementation of the relevant requirements in 5.1.6.3 of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships, in particular:

(1) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

① radiographic equipment;

② ultrasonic equipment;

③ magnetic particle equipment;

④ dye penetrant.

(2) The following are also to be complied with during the survey:

① explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use are to be made available during the survey. A safety checklist is to be provided;

② adequate and safe lighting is to be provided for the safe and efficient conduct of the survey;

③ adequate protective clothing is to be made available and used (e.g. safety helmet, gloves, safety shoes, etc.).

[1] According to the requirements in IACS PR37, oxygen levels between 20.6% and 22% are considered safe.

7 Survey requirements

7.1 Overall survey

This section of the survey programme is to identify and list the spaces that is to undergo an overall survey for this ship in accordance with Sections 6 and 8 of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships. An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo oil tanks/liquid cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces adjacent to cargo oil tanks/liquid cargo tanks and all ballast within the cargo area.

Attentions: According to 5.1.5.1(11) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships, an overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

Key points: (1) is Cargo Holds, (2) is Ballast Tanks, (3) is Fuel Oil Tanks, (4) is Lube Oil Tanks and (5) is Fresh Water Tanks. If all tanks are inspected, the names and frames can be listed, or "All Cargo tanks" or "All ballast tanks" are to be directly filled in. For (6) Other Tanks/ Spaces, the following are to be filled in except (1) to (5) but not limited to: pump-rooms, pipe tunnels, cofferdams, void spaces and LNG ready spaces in VLCC. Tanks/spaces outside the cargo area need not be filled in.

7.2 Close-up survey

This section of the survey programme is to identify and list the hull structures that are to undergo a close-up survey for this ship in accordance with Sections 6 and 8 of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

Attentions: The Surveyor may extend the close-up survey as deemed necessary taking into account the maintenance of the tanks under survey, the condition of the corrosion prevention system and also in the following cases. For areas in tanks where hard protective coatings are found to be in a GOOD condition, the extent of close-up surveys may be specially considered.

Key points: Except for special cases, please fill in with reference to the table "Minimum Requirements for Close-up Surveys" in Rules for Classification of Sea-Going Steel Ships. The specific tanks and locations are to be determined jointly by the owner and the attending surveyor but may not be specified in the preparation of the survey programme. For example, for a 10,000dwt oil tanker for Special Survey No.1, please fill in:

(A) One web frame, in a ballast tank.
(B) One deck transverse, in a cargo oil tank.
(C) One transverse bulkhead, in a complete ballast tank.
(D) One transverse bulkhead in a cargo oil centre tank.
(E) One transverse bulkhead, in a cargo oil wing tank.

For the extended close-up survey when the Surveyor deems it necessary, the following description can be added based on the above: The Surveyor extends the close-up survey as follows: the deck plating and deck transverse under No.3 C.O.T.(P&S).

8 Identification of tanks for tank testing

This section of the survey programme is to identify and list the cargo holds and tanks that are to undergo tank testing for this ship in accordance with Sections 6 and 8 of Chapter 5, PART ONE

of ISC Rules for Classification of Sea-Going Steel Ships.

Attentions:

(1) Cargo oil tank/ liquid cargo tank boundaries facing ballast tanks, void spaces, pipe tunnels, pump rooms or cofferdams for Special Survey No.1 (Age≤5), and all cargo oil tank/ liquid cargo tank bulkheads and all ballast tank boundaries for Special Survey No.2 and Subsequent (age >5) are to be pressure tested

(2) The Surveyor may accept cargo oil tank/ liquid cargo tank tests carried out by the crew under the direction of the master if the following requirements are met:

① Prior to cargo oil tank/ liquid cargo tank test, the cargo oil tank/ liquid cargo tank test procedures with specified loading height, loading tank and test bulkhead have been submitted to ISC by the owner and have been approved;

② There is no record of leakage, deformation or substantial corrosion affecting the structural integrity of cargo oil tank/ liquid cargo tank;

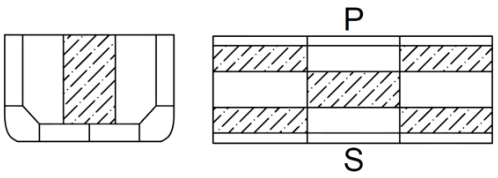
③ The cargo oil tank/ liquid cargo tank test has been conducted satisfactorily in a special survey window not exceeding 3 months before the completion date of the overall or close-up survey;

④ Satisfactory test results have been recorded in the logbook;

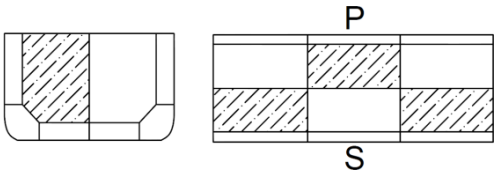
⑤ The Surveyor finds the internal and external conditions of the liquid cargo tank and its related structures satisfactory when conducting a overall or close-up survey.

(3) For double hull oil tankers and chemical tankers, the testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.

(4) When conducting liquid cargo tank tests, chessboard cross-loading can be carried out on board (please refer to the figure below) so that the bulkheads in each cargo oil tank will bear full load head, but the intended loading and stability conditions are to be checked and confirmed by the master.



Oil tanker with two longitudinal bulkheads



Oil tanker with a longitudinal bulkhead on the centreline

(5) Pressure tests on cargo oil tanks/liquid cargo tanks/ballast tanks may not normally be required for intermediate survey in the scope of the previous special survey unless deemed necessary by the surveyor.

Key points: All space names frames can be listed, or "All ballast tanks" are to be directly filled in. Tanks outside the cargo area need not be filled in.

9 Identification of areas and sections for thickness measurements

This section of the survey programme is to identify and list the areas and sections where thickness measurements are to be taken in accordance with Sections 6 and 8 of Chapter 5,

PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

Key points: Except for special cases, please fill in with reference to the table "Minimum Requirements for Thickness Measurements" in Rules for Classification of Sea-Going Steel Ships. The specific tanks and locations are to be determined jointly by the owner and the attending surveyor but may not be specified in the preparation of the survey programme. For example, for a VLCC for Special Survey No.3, please fill in:

1) Within the cargo area:

A) Each deck plate;

B) Two transverse sections;

C) All wind and water strakes.

2) Selected wind and water strakes outside the cargo area.

3) Internals in forepeak and afterpeak ballast tanks.

4) Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:

A) All web frames, in all ballast tanks.

B) All web frames, including deck transverse and cross ties, if fitted, in a cargo oil tank.

C) One web frame, including deck transverse and cross ties, if fitted, in each remaining cargo oil tank.

D) All transverse bulkheads, in all cargo oil and ballast tanks.

5) Suspect areas throughout the vessel.

10 Minimum thickness of hull structures

This section of the survey programme is to specify the minimum thickness for hull structures of this ship that are subject to survey, according to (a), (b) or (c) as follows:

(a) determined from the attached wastage allowance table and the original thickness to the hull structure plans of the ship (refer to Appendix 3.1 of this Programme);

(b) Minimum Thickness Table of Hull Structure given in Appendix 3.2;

(c) For CSR ships, the renewal thickness of the hull structure elements is to be indicated in the appropriate drawings.

Attentions:

(1) For non-CSR oil tankers and chemical tankers, generally (a), the allowable corrosion given in Appendix 3.1, is to be selected by using Appendix 1 Criteria for Renewal of Structural Members of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships. For CSR oil tankers, leave this blank.

(2) For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

11 Thickness measurement company

This section of the survey programme is to identify changes, if any, relating to the information on the thickness measurement firm provided in the Survey Planning Questionnaire.

12 Damage experience related to the ship

This section of the survey programme is to, using the tables provided below, provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Attentions: Typical hull related design damages, such as cracking and buckling, are caused primarily by vibration, high stress levels or fatigue. Areas with high stress and bending moment are generally within the amidships 0.5L, the front bulkhead of the engine room, the connecting parts of frames and the bracket, etc. Other hull failure, such as corrosion, is related to the ageing process, and is closely connected with the quality of corrosion prevention systems fitted at new building, and subsequent maintenance during the service life. Corrosion may also lead to cracking and/or buckling. The owner can find corrosion-prone areas such as middle fore peak tank, longitudinal bone below deck, inner bottom plating in cargo hold, etc., in the survey report (e.g. Form RA) and ship repair history, and is to fill the damage location and damage description in the table.

Key points:

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area

Possible cause if known

Description of the damages

Location

Repair

Date of repair

If not, it can be written as: No damages reported to ISC.

Hull damages for sister or similar ships (if available) in the case of design related damage

13 Areas identified with substantial corrosion from previous surveys

This section of the survey programme is to identify and list the areas of substantial corrosion from previous surveys.

Attentions:

(1) Substantial corrosion is an extent of corrosion such that assessment of corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits. For CSR oil tankers, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between t_{ren} + 0.5 mm and t_{ren}.

(2) In this case, class memoranda are usually left to illustrate.

14 Critical structural areas and suspect areas

This section of the survey programme is to identify and list the critical structural areas and the suspect areas, when such information is available.

Attentions:

(1) Critical structural areas are locations which have been identified from calculations to require monitoring or from the service history of the subject ship or from similar or sister ships (if available) to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

(2) Suspect areas are locations showing substantial corrosion and/or are considered by the

surveyor to beprone to rapid wastage.

Key points:

(1) For ships holding the Structural Access Manual (PMA), the compiler is to pay attention to the description of critical structural areas in the manual; For ships with the class notation of CM, it is to be noted that the Construction Monitoring Plan (CMP) for hull structures includes critical structural areas that need to be monitored in the surveys of ships in service. When filling in the programme, the critical structural areas in the manual can be listed directly, or the relevant manual can be directly referred to, such as "Refer to approved Structure Access Manual /CMP (Drawing No. XXXXXXXX)".

(2) Whether or not a ship holds the manual described in (1), the critical structure areas usually include at least the following table and diagram:

Ship type	Area	Critical structure areas
Oil tanker/chemical tanker	Liquid cargo tank	connections of primary structures, such as inner bottom, long. bulkhead, vertical web, cross ties, stringers, web frames, deck transvers, particularly end bracket toes
Oil tanker/chemical tanker	Liquid cargo tank	boundaries of corrugations and bulkhead stools particularly in way of shelf plates, deck, inner bottom, etc
Oil tanker/chemical tanker	Liquid cargo tank/ hopper side tank	knuckle connection between inner bottom plating and bilge hopper sloping plating，particularly connected hopper tank web frames, double bottom side girders and floors
Oil tanker/chemical tanker	Liquid cargo tank/ hopper side tank	knuckle connection of bilge hopper sloping plating to inner hull longitudinal bulkhead, particularly connected web plating and horizontal girders
Oil tanker/chemical tanker	Wing tank/ hopper side tank/ double bottom tank	connections of longitudinals to transverse web frames, floors and transverse bulkheads
Oil tanker/chemical tanker	Main deck	ends of deck transverse，if deck structures fitted on top of deck

Critical structural areas of typical tankers

1 Liquid cargo tank

connections of primary structures, such as inner bottom, long. bulkhead, vertical web, cross ties, stringers, web frames, deck transvers, particularly end bracket toes

2 Liquid cargo tank

boundaries of corrugations and bulkhead stools particularly in way of shelf plates, deck, inner bottom, etc

3 Liquid cargo tank/hopper side tank

knuckle connection between inner bottom plating and bilge hopper sloping plating，particularly connected hopper tank web frames, double bottom side girders and floors

4 Liquid cargo tank/hopper side tank

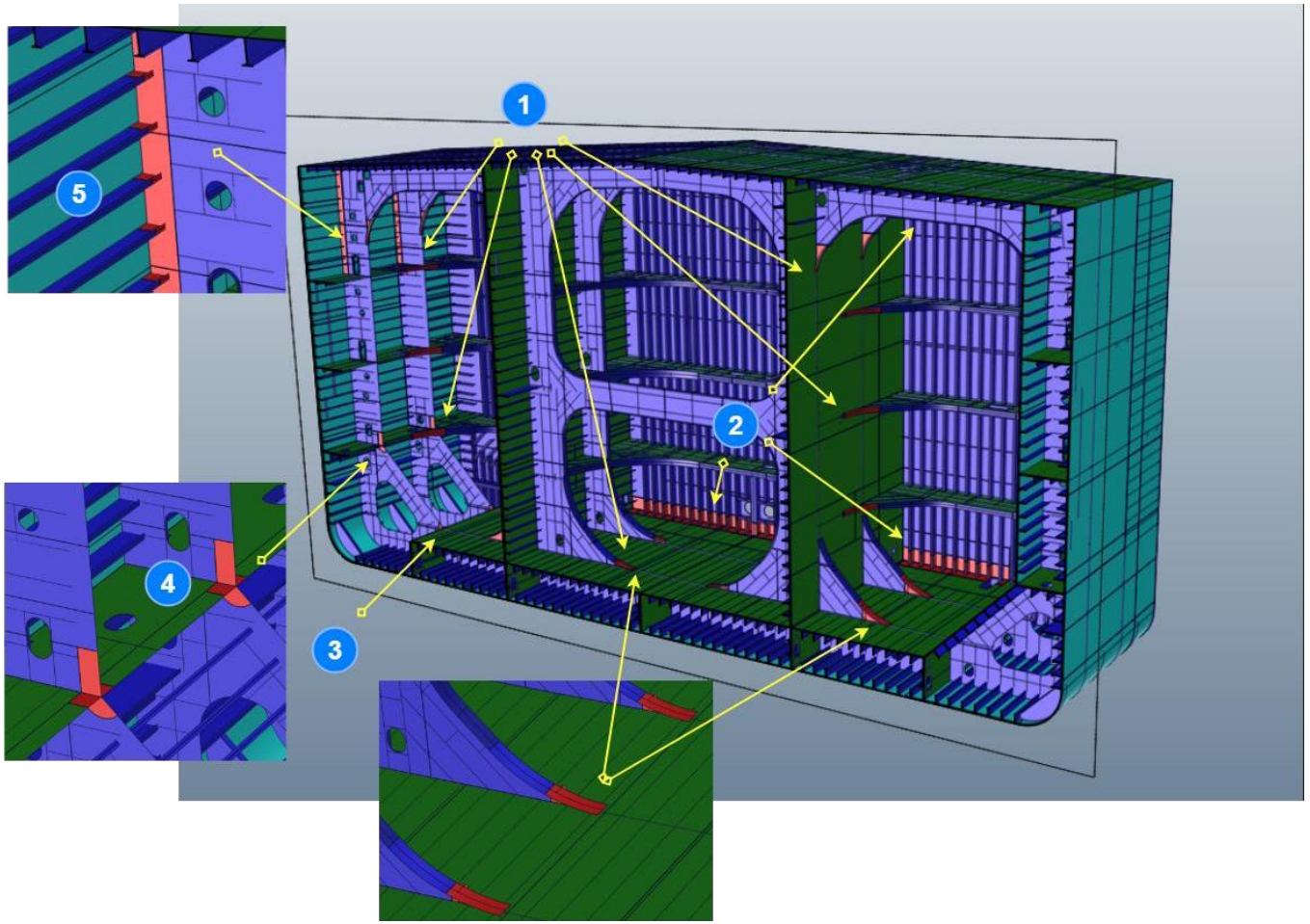
knuckle connection of bilge hopper sloping plating to inner hull longitudinal bulkhead, particularly connected web plating and horizontal girders

5 Wing tank/hopper side tank/double bottom tank

connections of longitudinals to transverse web frames, floors and transverse bulkheads

6 Main deck

ends of deck transverse，if deck structures fitted on top of deck



(3) Where applicable, care is to be taken to collect special critical structural areas identified as a result of design defects found on the ship or on sister ships or similar ships.

15 Other relevant comments and information

This section of the survey programme is to provide any other comments and information relevant to the survey.

Key points: If not, fill in Nil.

Appendices

Appendix 1 List of plans

5.1.6.5(3) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships requires that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS) be available.

This section of the survey programme is to identify and list the main structural plans which form part of the survey programme.

Appendix 1.1 main structural plans of cargo holds and ballast tanks

Key points: This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel. For chemical tankers, information regarding use of composite steel and stainless steel is to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

Appendix 1.2 Other relevant plans

Key points: This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

Appendix 2 Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, is to be appended to the survey programme.

Appendix 3 Other documentation

This section of the survey programme is to identify and list any other documentation that forms part of the plan.

Appendix 3.1 Allowable corrosion

Appendix 3.2 Minimum Thickness Table of Hull Structure

Key points: For non-CSR tankers and chemical tankers, a choice is to be made between 3.1 and 3.2. For details, please refer to the above 10 "Minimum thickness of hull structures" and require corresponding to 10.

Prepared by the owner in co-operation with ISC.

Date: (name and signature of authorized owner‘s representative)

Date: (name and signature of ISC Surveyor).

Key points: Due to the update of survey programme (Form ESP-T) version, the signature position has been adjusted to this point. Care is to be taken not to omit it. The survey programme is to be signed by the person responsible for ship inspection, usually the head of maintenance. The following is to be signed by a surveyor qualified for ESP. In principle, the date here is to be one month prior to the commencement of the survey.

Annex Templates of Survey Programme

Annex 1 Template of Survey Programme for Single-Side Skin Bulk Carriers

(Note: This annex selects the template of the survey programme of Special Survey No.4 of a 170,000 DWT non-CSR single-side skin bulk carrier built in 2002 for reference.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR BULK CARRIERS

Basic information and particulars

Ship's name:	PA*******S D
Kind of Survey:	☒ No.__4__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	92******6
Flag State:	Cyprus
Port of registry:	Limassol
Gross tonnage:	86734
Deadweight (metric tonnes):	170188.00
Length between perpendiculars(m):	278.00
Shipbuilder:	Sa**** Heavy Industries Co.,Ltd., K****
Hull No.:	S-**3
Recognized organization (RO):	International Ship Classification
Class No.:	02T***6
Class Character and Notations of Hull:	★ CSA Bulk Carrier; Holds Nos.2, 4 , 6 & 8 may be Empty; CM; Strengthened for Heavy Cargoes; Grab*(35);Loading Computer (S, I, G, D); ESP; In-Water Survey; BWMP
Date of build of the ship:	January 16, 2002
Owner:	C********** MARINE COMPANY LIMITED
Thickness measurement firm:	G******* MARINE LTD

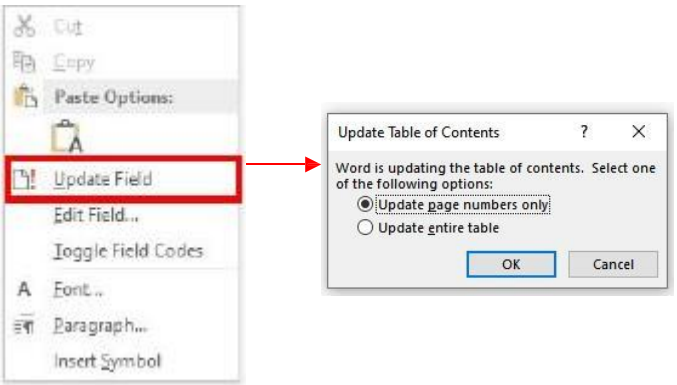
Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : ☒ *Applicable* □ *Not applicable* *Form ESP-BC Ver.4.0 202009*

CONTENTS

Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

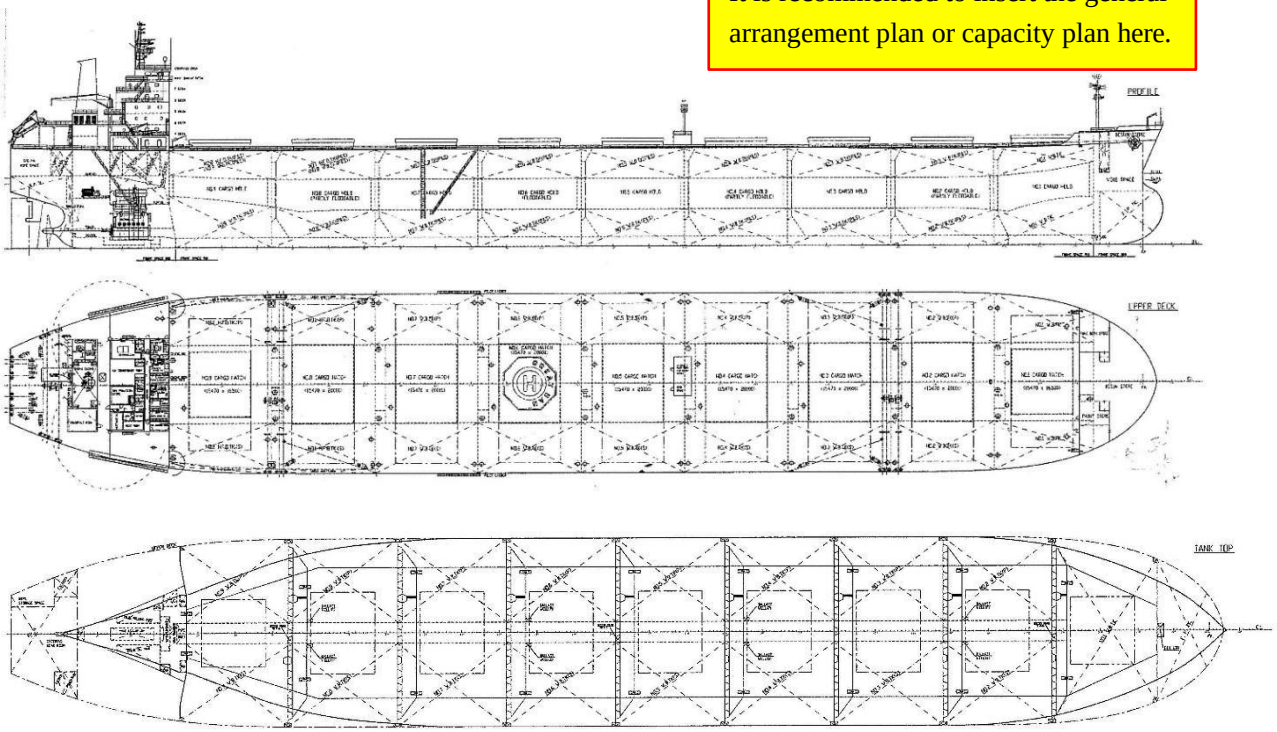
1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)①, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of cargo holds, tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.



3. List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the cargo holds and ballast tanks of the ship, the extent of coatings and the corrosion prevention system provided in the Survey Planning Questionnaire.

Tank/ Hold No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC
NO.1 T.S.W.B.TK.(P)	HC-N			X					X			X	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

This article only needs to be completed when the questionnaire is changed or updated. For example, the NO.1 T.S.W.B.TK.(P) mentioned above has not been used for a long time and the coating state has been in Poor at the time of the last survey, which is to be marked here.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Cargo holds, tanks and spaces shall be safe for access. Cargo holds, tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access shall be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating shall be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Cargo Holds	Hatch side coamings							
	Topside sloping plate							
	Upper stool plating							
	Cross deck							
	Side shell, frames and brackets							
	Transverse bulkhead							
	Hopper tank plating							
	Lower stool							
	Tank top							
Topside Tanks	Underdeck structure							
	Side shell and structure							
	Sloping plate and structure							
	Webs and bulkheads							
Hopper Tanks	Hopper sloping plate and structure							
	Side shell and structure							
	Bottom structure							
	Webs and bulkheads							
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure							

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

	Upper stool internal structure							
	Lower stool internal structure							
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

5.2.1 For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Portable ladders;

(e) Boats or rafts; and/or

(f) Other equivalent means.

5.2.2 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers less than 100,000 dwt, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Portable ladder restricted to not more than 5m in length may be accepted for surveys of lower section of a shell frame including bracket;

(d) Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

(e) Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

(f) Other equivalent means.

5.2.3 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers of 100,000 dwt and above, the use of portable ladders shall not be accepted and one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Annual surveys, intermediate survey under 10 years of age and first special survey:

- Permanent staging and passages through structures;

- Temporary staging and passages through structures;

- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

(b) Subsequent intermediate surveys and special surveys:

- Either permanent or temporary staging and passages through structures for close-up survey of at least the upper part of hold frames;

- Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging;

- Lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

5.3 Notwithstanding the above requirements, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the "close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames, including approximately lower one third length of side frame at side shell and side frame and attachment and the adjacent shell plating of the forward cargo hold" at annual survey.

5.4 The use of hydraulic arm vehicles or aerial lifts ("cherry pickers") may be accepted by the attending surveyor for the close-up survey of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17 m.

6. List of equipment for survey

This section of the survey programme shall identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requireme

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Holds:

No.1-9 cargo holds

(2) Ballast Tanks:

NO.1-5 D/B &T.S.W.B.TK.(P&S), No.2/4/6/8 cargo hold, Forepeak Tank, Aft Peak Tank

(3) Fuel Oil Tanks:

NO.1 H.F.O STOR.TK(P&S)

(4) Lube Oil Tanks:

Considering that there is generally no lube oil tank or fresh water tank in the cargo length area, (4) and (5) need not be filled in here.

(5) Fresh Water Tanks:

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo holds, cofferdams, pipe tunnels, double side tanks (if fitted) and void spaces bounding cargo holds, and fuel oil tanks within the cargo length area and all ballast tanks. The internal examination of fuel oil tanks within the cargo length area is to be conducted in accordance with 5.4.4.2(2) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

(6) Other Tanks/ Spaces:

Pipe Duct

The following are to be filled in except (1) to (5) but not limited to: pipe tunnels, void spaces and LNG ready spaces in VLOC.

7.2 Close-up survey

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A) All shell frames in all cargo holds including upper and lower end attachments and adjacent shell plating.

B) All transverse webs with associated plating and longitudinals in each water ballast tank.

C) All transverse bulkheads in ballast tanks, including stiffening system.

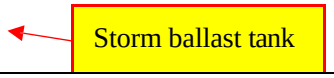
D) All cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted.

E) All cargo hold hatch covers and coamings (plating and stiffeners).

F) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Ballast Tanks:	NO.1-5 D/B &T.S.W.B.TK.(P&S), Forepeak Tank, Aft Peak Tank
Cargo Holds used for water ballast:	No.2/4/6/8 cargo hold 
Fuel Oil Tanks:	NO.1&2 H.F.O STOR.TK(P&S)
Lube Oil Tanks:	
Fresh Water Tanks:	
Others: (if any)	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of ballast holds are to be tested with a head of liquid to near to the top of hatches.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1. Within the cargo length:

A) Each deck plate outside line of cargo hatch openings;

B) Three transverse sections, one in the amidship area, outside line of cargo hatch opening;

C) Each bottom plate.

2. All wind and water strakes, full length.

3. Measurement, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:

A) All shell frames in all cargo holds including upper and lower end attachments and adjacent shell plating.

B) All transverse webs with associated plating and longitudinals in each water ballast tank.

B) All transverse bulkheads in ballast tanks, including stiffening system.

C) All cargo hold transverse bulkheads, including internal structure of upper and lower stools, where fitted.

D) All cargo hold hatch covers and coamings (plating and stiffeners).

E) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.

4. Internals in forepeak and afterpeak ballast water tanks.

10. Minimum thickness of hull structures

Note that the selection here is to correspond to Appendix 3 below.

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☒ For non-CSR Bulk Carriers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Bulk Carrier, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

Name of firm: G******** MARINE LTD

Address: 4**********ADON **********EUS, GR*****E

If there is any change in thickness measurement firm before survey, please fill in the latest information here.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
The bottom region of F.P.T	stranded	The bottom plating were deformed and set in. The partly internal structural members (transverse bulkhead, transverse web frame, stiffener, etc.) of	The bottom of F.P.T in way of Fr. 250~ Fr. 262,	The bottom plating cropped and renewed in size 18×8400×7800(AH36); The transverse web Fr.254 cropped and renewed in size 12 × 2900 × 2600, 12 × 2000 ×	September 3, 2018

		F.P.T in way broken & bend in different degree.		1500； The transverse web Fr.258 cropped and renewed in size 12 ×6200×2200； The transverse web Fr.262 cropped and renewed in size 12 ×3340×1400； The Longitudinal web from Fr.251 to Fr.263 cropped and renewed in size 14 × 9100 × 1400；	
			This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.		

Hull damages for sister or similar ships (if available) in the case of design related damage

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
NO.3 D/B W.B.TK.(P)	Uncertainly	Crack on the trans. web on hopper plate	Trans web around slot at Fr.No.157	Renewed	June, 2016

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

The inner bottom plating in No.2 & 4 cargo holds.

In this case, class memoranda are usually left to illustrate.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

List of Critical Areas for Bulk Carriers		
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	connections of longitudinals to transverse web frames and transverse bulkheads
Bulk Carriers	Topside tanks	corners of transverse web frames
Bulk Carriers (Single hull)	Topside tanks/ Hopper tanks/ Cargo holds	connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks
Bulk Carriers	Cargo holds	connections of hatch end beam to topside tank web frame
Carriers (Single hull)	Cargo holds/ Hopper tanks/ Double-bottom tanks	welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Bulk Carriers/ Ore Carriers	Cargo holds	connections of corrugated bulkhead, shelf and stool plating
Bulk Carriers/ Ore Carriers	Cargo holds	connections of lower stool plating to the inner bottom
Bulk Carriers/ Ore Carriers	Main deck	web or deck at the toes of the longitudinal hatch coaming termination bracket
Bulk Carriers/ Ore Carriers	Main deck	hatch corners
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	transverse bulkhead adjacent to heated fuel oil tank (if fitted)
Ore Carriers	Wing tanks	connections of deck transverse in way of sheer strake and longitudinal bulkhead top strake
Ore Carriers	Wing tanks	corners of cross ties and floors
Ore Carriers	Wing tanks	connection of horizontal stringer on transverse bulkhead and side shell longitudinal
Ore Carriers	Cargo holds/Wing tanks	connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors
Ore Carriers	Cargo holds	connections of deck transverses to deck girders

Ore Carriers	Cargo holds	connections of deck girders to hatch end beam
Ore Carriers	Cargo holds	connections of the upper stool sloping plating to the deck plating

The illustrative bulk carrier in the annex was completed in 2002 without PMA/CMP. No description is added here.

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.
Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS), shall be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ☒

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.* ☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: November 5, 2019 (.....)

(name and signature of authorized owner's representative)

Date: November 7, 2019 (….....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo holds and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Hatch Covers & Hatch Coaming Construction
8	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR BULK CARRIER
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	PA********S D
IMO number:	92*******6
Flag State:	Cyprus
Port of registry:	Limassol
Owner:	C********** MARINE COMPANY LIMITED
Recognized organization:	International Ship Classification
Gross tonnage:	86734
Deadweight (metric tonnes):	170188.00
Date of build:	January 16, 2002

Input basic information and parameters.

2. Information on access provision for close-up surveys and thickness measurement

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak		X				X	
A.P.	Aft Peak		X				X	
Cargo Holds	Hatch side coamings		X				X	
	Topside sloping plate		X					

	Upper stool plating		X					
	Cross deck		X					
	Side shell, frames and brackets		X					
	Transverse bulkhead		X					
	Hopper tank plating		X					
	Lower stool		X				X	
	Tank top						X	
Topside Tanks	Underdeck structure		X				X	
	Side shell and structure		X				X	
	Sloping plate and structure						X	
	Webs and bulkheads		X				X	
Hopper Tanks	Hopper sloping plate and structure		X				X	
	Side shell and structure		X				X	
	Bottom structure						X	
	Webs and bulkheads		X				X	
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure						X	
	Upper stool internal structure						X	
	Lower stool internal structure						X	
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure			For structures that do not apply (do not exist), leave the cell blank.				
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content):

Nil.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content) (if any).

3. Owner's inspection

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo holds and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank/ Hold No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Hold and tank History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo holds																	
No.1 cargo hold	HC-N					X	X				X			N			
No.2 cargo hold	HC-N					X	X				X			N			
No.3 cargo hold	HC-N					X	X				X			N			
No.4 cargo hold	HC-N					X	X				X			N			
No.5 cargo hold	HC-N					X	X				X			N			
No.6 cargo hold	HC-N					X	X				X			N			
No.7 cargo hold	HC-N					X	X				X			N			
No.8 cargo hold	HC-N					X	X				X			N			
No.9 cargo hold	HC-N					X	X				X			N			
Topside tanks																	
NO.1 T.S.W.B.TK.(P)	HC-N			X					X		X			N			
NO.1 T.S.W.B.TK.(S)	HC-N			X					X		X			N			
NO.2 T.S.W.B.TK.(P)	HC-N			X					X		X			N			
NO.2 T.S.W.B.TK.(S)	HC-N			X					X		X			N			
NO.3 T.S.W.B.TK.(P)	HC-N			X					X		X			N			
NO.3 T.S.W.B.TK.(S)	HC-N			X					X		X			N			
NO.4 T.S.W.B.TK.(P)	HC-N			X					X		X			N			
NO.4 T.S.W.B.TK.(S)	HC-N			X					X		X			N			
NO.5 T.S.W.B.TK.(P)	HC-N			X					X		X			N			
NO.5 T.S.W.B.TK.(S)	HC-N			X					X		X			N			
Hopper tanks																	
NO.1 D/B W.B.TK.(P)	HC-N			X					X		X			N			

NO.1 D/B W.B.TK.(S)	HC-N			X					X		X			N			
NO.2 D/B W.B.TK.(P)	HC-N			X					X		X			N			
NO.2 D/B W.B.TK.(S)	HC-N			X					X		X			N			
NO.3 D/B W.B.TK.(P)	HC-N			X					X		X			N			
NO.3 D/B W.B.TK.(S)	HC-N			X					X		X			N			
NO.4 D/B W.B.TK.(P)	HC-N			X					X		X			N			
NO.4 D/B W.B.TK.(S)	HC-N			X					X		X			N			
NO.5 D/B W.B.TK.(P)	HC-N			X					X		X			N			
NO.5 D/B W.B.TK.(S)	HC-N			X					X		X			N			
Double side tanks																	
Double bottom tanks																	
Refer to **Hopper tanks**																	
Upper stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
No.6 cargo hold FWD	HC-N								X	X				N			
No.7 cargo hold FWD	HC-N								X	X				N			
No.8 cargo hold FWD	HC-N								X	X				N			
No.9 cargo hold FWD	HC-N								X	X				N			
Lower stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
No.6 cargo hold FWD	HC-N								X	X				N			
No.7 cargo hold FWD	HC-N								X	X				N			
No.8 cargo hold FWD	HC-N								X	X				N			
No.9 cargo hold FWD	HC-N								X	X				N			
Wing tanks **(Ore Tankers)**																	
Fore peak	HC-N			X					X		X			N	X		

Aft peak	HC-N			X					X		X			N			
Miscellaneous other spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Fore Peak is marked here with a history of damage and repair, which is consistent with 12 of the survey programme above.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature:.....

Date: **September 25, 2019**

4. Reports of Port State Control inspections

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
Nothing to report				

When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures.

Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:

Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification
Nothing to report			

6. Name and address of the approved thickness measurement firm

Name of firm: Zh**********d Engineering Co.,Ltd.

Address: **********wei, **********pu District, Guangzhou

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

This Appendix does not apply to the ships constructed in accordance with PART TEN of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	**Minimum renewal thickness**	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**
Note: For bulk carriers designed in accordance with ISC Rules and assigned the class notation of "Strengthened for Heavy Cargoes" and "Grab* (×)", the minimum renewal thickness of inner bottom may be taken as 75%.		

2 For bulk carriers constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

3 For bulk carriers of 150 m in length and upwards, contracted for construction on or after 1 July 1998 and carrying solid bulk cargoes having a density of 1.0 t/m^3 and above, steel renewal is required where the gauged thickness of watertight corrugated bulkheads is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, where t_{net} being net thickness and obtained in accordance with Section 9, Chapter 8 of PART TWO of ISC Rules, except for:

(1) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999;

(2) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 760 mm;

(3) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 1,000 mm.

4 For bulk carriers contracted for construction on or after 1 July 1998 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness of hatch covers is less than t_{net} + 0.5 mm. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, steel renewal is required where the gauged thickness is less than t_{net} or the Surveyor deems it necessary based on the corrosion or deformation. t_{net} is net thickness and to be obtained in accordance with Section 11, Chapter 8 of PART TWO of ISC Rules.

5 For bulk carriers, ore carriers and combination carriers (defined in Appendix 2, Chapter 2 of Part Nine of ISC Rules) contracted for construction on or after 1 January 2004 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness is less than t_{net} + 0.5 mm for single skin hatch cover and pontoon hatch cover platings, hatching coamings and coaming stays. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, thickness measurement is required when ISC Surveyor deems it necessary based on the corrosion or deformation. Where the gauged thickness is less than tnet, the internal structure is to be renewed.

6 For the following bulk carriers of 150 m in length and upwards and carrying solid bulk cargoes having a density of 1.78 t/m^3 and above, steel renewal is required where the gauged thickness of transverse watertight corrugated bulkheads between cargo holds Nos. 1 and 2 is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, with t_{net} being calculated in accordance with IACS UR S19:

(1) Bulk carriers contracted for construction before 1 July 1998 and not complying with IACS UR S18;

(2) Bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999 and not complying with IACS UR S18.

7 For bulk carriers which were not built in accordance with Section 3, Chapter 8 of PART TWO of ISC Rules, steel renewal is required where the gauged thickness of side shell frames of cargo holds is less than t_{REN} mm. Where the gauged thickness is within the range t_{REN} mm and t_{COAT} mm, sand blasting, coating and reinforcements are to be done and the coating is to be maintained in "as-new" or an equivalent condition (i.e. without breakdown or rusting) at special and intermediate surveys. The t_{REN} and t_{COAT} above are to be calculated in accordance with IACS UR S31.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Cross deck plating				
Cross deck stiffeners				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Floors				
Ship side in way of top side tanks				
Plating				
Longitudinals				
Ship side in way of hopper side tanks				
Plating				
Longitudinals				
Ship side in way of tanks (if applicable)				
Plating				
Longitudinals or ordinary transverse frames				
Longitudinal stringers				
Ship side in way of cargo holds				
Plating				
Side frames webs				
Side frames flanges				
Upper brackets webs				

If applicable, and (b) is selected in item 10 of the preceding text,the form is to be filled in item by item according to the corrosion criteria given by the classification society for various hull structures.

Upper brackets flanges				
Lower brackets webs				
Lower brackets flanges				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Upper stool plating				
Upper stool stiffeners				
Lower stool plating				
Lower stool stiffeners				
Transverse web frames in top side tanks				
Plating				
Flanges				
Stiffeners				
Transverse web frames in hopper tanks				
Plating				
Flanges				
Stiffeners				
Hatch covers				
Plating				
Stiffeners				
Hatch coamings				
Plating				
Stiffeners				

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 2 Template of Survey Programme for Double Skin Bulk Carriers

(Note: This annex selects the template of survey programme of Special Survey No.2 of a 50,000 DWT non-CSR double-side skin bulk carrier built in 2010 for reference.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR BULK CARRIERS

Basic information and particulars

Ship's name:	RU****NG 5
Kind of Survey:	☒ No.__2__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	95***11
Flag State:	China
Port of registry:	Ti***in
Gross tonnage:	32460
Deadweight (metric tonnes):	53483.40
Length between perpendiculars(m):	183.05
Shipbuilder:	Ch****** Shipyard Co.,Ltd.
Hull No.:	C****7
Recognized organization (RO):	International Ship Classification
Class No.:	10Y***2
Class Character and Notations of Hull:	★ CSA Bulk Carrier, Double Side Skin; BC-A(Holds Nos. 2 & 4 may be Empty, or Holds 3 may be empty, Max. Cargo Density (1.35 t/m^3)) ; Strengthened for Heavy Cargoes; COMPASS (D,F); Grab(20); Loading Computer (S, I, G); ESP; BWMP(MEPC.127(53))
Date of build of the ship:	March 24, 2010
Owner:	IC**********ng Co.,Ltd.
Thickness measurement firm:	Zh**********ering Co.,Ltd.

Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : ☒ *Applicable* □ *Not applicable* *Form ESP-BC Ver.4.0 202009*

CONTENTS

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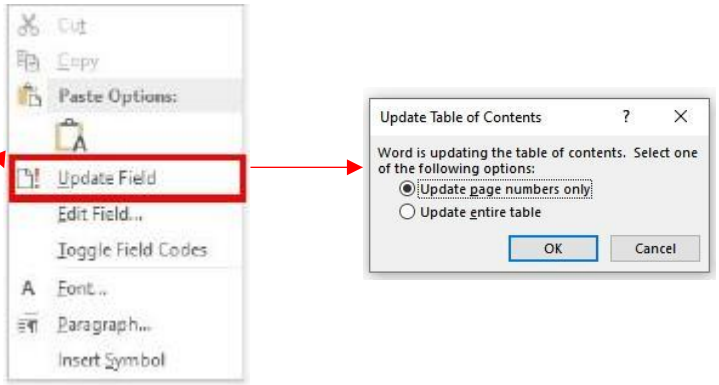


Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

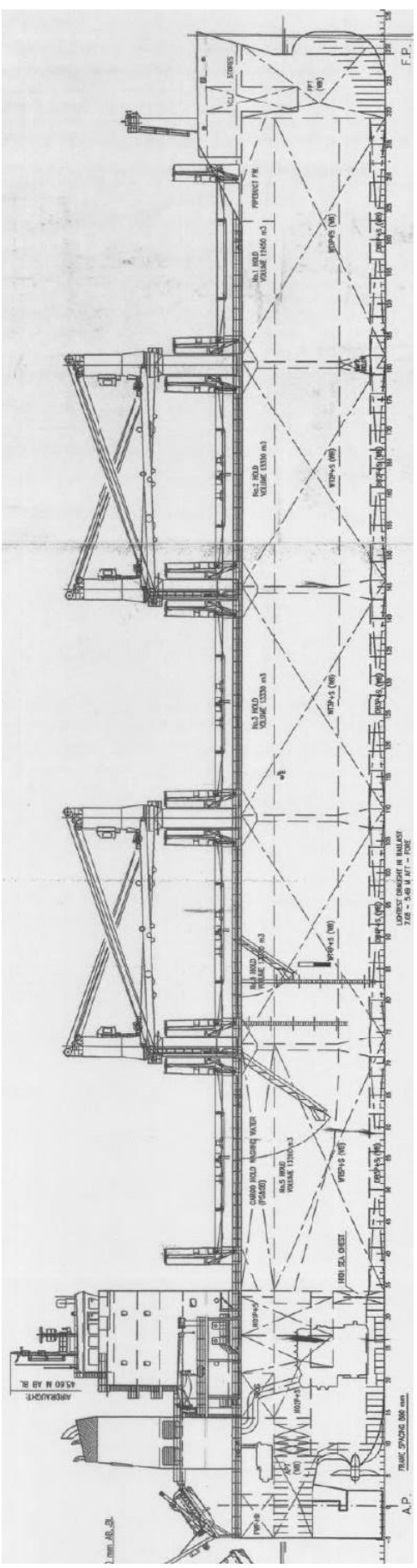
1.2 Documentation

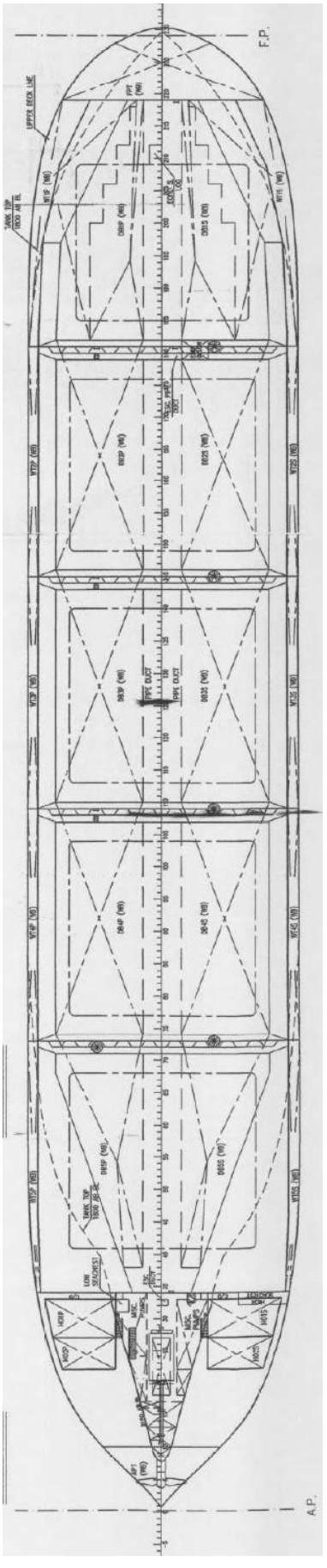
All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)①, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of cargo holds, tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.





3. List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the cargo holds and ballast tanks of the ship, the extent of coatings and the corrosion prevention system provided in the Survey Planning Questionnaire.

Tank/ Hold No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Cargo holds, tanks and spaces shall be safe for access. Cargo holds, tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other

structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access shall be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating shall be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Cargo Holds	Hatch side coamings		X				X	
	Topside sloping plate		X					
	Upper stool plating		X					
	Cross deck	X						
	Side shell, frames and brackets		X					
	Transverse bulkhead		X				X	
	Hopper tank plating		X					
	Lower stool						X	
	Tank top						X	
Topside Tanks	Underdeck structure							
	Side shell and structure							
	Sloping plate and structure							
	Webs and bulkheads							
Hopper Tanks	Hopper sloping plate and structure							

This article only needs to be filled in when the questionnaire is changed or updated. Here the ship company decided to set up scaffolding in the cargo hold for inspection and updated the information.

	Side shell and structure							
	Bottom structure							
	Webs and bulkheads							
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure							
	Upper stool internal structure							
	Lower stool internal structure							
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Note: To be filled with "X" in all columns except for "Other means (please specify)" as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

5.2.1 For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Portable ladders;

(e) Boats or rafts; and/or

(f) Other equivalent means.

5.2.2 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers less than 100,000 dwt, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Portable ladder restricted to not more than 5m in length may be accepted for surveys of lower section of a shell frame including bracket;

(d) Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

(e) Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

(f) Other equivalent means.

5.2.3 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers of 100,000 dwt and above, the use of portable ladders shall not be accepted and one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Annual surveys, intermediate survey under 10 years of age and first special survey:

- Permanent staging and passages through structures;

- Temporary staging and passages through structures;

- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

(b) Subsequent intermediate surveys and special surveys:

- Either permanent or temporary staging and passages through structures for close-up survey of at least the upper part of hold frames;

- Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging;

- Lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

5.3 Notwithstanding the above requirements, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the "close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames, including approximately lower one third length of side frame at side shell and side frame and attachment and the adjacent shell plating of the forward cargo hold" at annual survey.

5.4 The use of hydraulic arm vehicles or aerial lifts ("cherry pickers") may be accepted by the attending surveyor for the close-up survey of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17 m.

6. List of equipment for survey

This section of the survey programme shall identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Holds:

Nos.1-5 Cargo Holds

(2) Ballast Tanks:

Nos.1,2,3,4,5 Wing.W.B.T.(P.&S.), No.1,2,3,4,5 D.B.W.B.T.(P.&S.), Cargo Hold Wash Water Tank(P&S), No.3Cargo Hold/W.B.T., F.P.T., A.P.T.

(3) Fuel Oil Tanks:

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo holds, cofferdams, pipe tunnels, double side tanks (if fitted) and void spaces bounding cargo holds, and fuel oil tanks within the cargo length area and all ballast tanks. The internal examination of fuel oil tanks within the cargo length area is to be conducted in accordance with 5.4.4.2(2) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

(4) Lube Oil Tanks:

Considering that there is generally no lube oil tank or fresh water tank in the cargo length area, (4) and (5) need not be filled in here.

(5) Fresh Water Tanks:

(6) Other Tanks/ Spaces:

The following are to be filled in except (1) to (5) but not limited to: pipe tunnels, void spaces and LNG ready spaces in VLOC.

UP. Pipe Duct(P&S), Pipe Duct

7.2 Close-up survey

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A) One transverse web with associated plating and longitudinals as applicable in each ballast tank
B) Forward and aft transverse bulkheads including stiffening system in a transverse section including topside, hopper side and double side ballast tanks
C) 25% of ordinary transverse web frames in the foremost double side tanks
D) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools
E) All cargo hold hatch covers and coamings (platings and stiffeners)
F) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Ballast Tanks:	All Ballast Tanks
Cargo Holds used for water ballast:	No.3 Cargo Hold/Water Ballast Tank
Fuel Oil Tanks:	
Lube Oil Tanks:	

Storm ballast tank

Fresh Water Tanks:	
Others: (if any)	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of ballast holds are to be tested with a head of liquid to near to the top of hatches.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1. Within the cargo length:

A) Two transverse sections of deck plating outside line of cargo hatch openings

2. Wind and water strakes in way of the two transverse sections considered above and Selected wind and water strakes outside the cargo length area.

4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:

A) One transverse web with associated plating and longitudinals as applicable in each ballast tank

B) Forward and aft transverse bulkheads including stiffening system in a transverse section including topside, hopper side and double side ballast tanks

C) 25% of ordinary transverse web frames in the foremost double side tanks

D) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools

E) All cargo hold hatch covers and coamings (platings and stiffeners)

F) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches

Note that the selection here is to correspond to Appendix 3 below.

10. Minimum thickness of hull structures

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☒ For non-CSR Bulk Carriers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Bulk Carrier, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No damages reported to ISC					

If unavailable, fill in "No damages reported to ISC"

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

Refer to approved Structure Access Manual (No.**********)

This is not to be left blank and can be referred to the approved Structure Access Manual.

List of Critical Areas for Bulk Carriers		
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	connections of longitudinals to transverse web frames and transverse bulkheads
Bulk Carriers	Topside tanks	corners of transverse web frames
Bulk Carriers (Single hull)	Topside tanks/ Hopper tanks/ Cargo holds	connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks
Bulk Carriers	Cargo holds	connections of hatch end beam to topside tank web frame
Carriers (Single hull)	Cargo holds/ Hopper tanks/ Double-bottom tanks	welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Bulk Carriers/ Ore Carriers	Cargo holds	connections of corrugated bulkhead, shelf and stool plating
Bulk Carriers/ Ore Carriers	Cargo holds	connections of lower stool plating to the inner bottom
Bulk Carriers/ Ore Carriers	Main deck	web or deck at the toes of the longitudinal hatch coaming termination bracket
Bulk Carriers/ Ore Carriers	Main deck	hatch corners
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	transverse bulkhead adjacent to heated fuel oil tank (if fitted)
Ore Carriers	Wing tanks	connections of deck transverse in way of sheer strake and longitudinal bulkhead top strake

Ore Carriers	Wing tanks	corners of cross ties and floors
Ore Carriers	Wing tanks	connection of horizontal stringer on transverse bulkhead and side shell longitudinal
Ore Carriers	Cargo holds/Wing tanks	connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors
Ore Carriers	Cargo holds	connections of deck transverses to deck girders
Ore Carriers	Cargo holds	connections of deck girders to hatch end beam
Ore Carriers	Cargo holds	connections of the upper stool sloping plating to the deck plating

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS), shall be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ☒

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.* ☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: March 5, 2020 (.....)

(name and signature of authorized owner's representative)

Date: March 9, 2020 (….....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo holds and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Hatch Covers & Hatch Coaming Construction
8	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION
SURVEY PLANNING QUESTIONNAIRE
FOR BULK CARRIER
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	RU****NG 5
IMO number:	95***11
Flag State:	China
Port of registry:	Ti***in
Owner:	IC**********ng Co.,Ltd.
Recognized organization:	International Ship Classification
Gross tonnage:	32460
Deadweight (metric tonnes):	53483.40
Date of build:	March 24, 2010

Input basic information and parameters.

2. Information on access provision for close-up surveys and thickness measurement

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak	X				X	X	
A.P.	Aft Peak	X				X	X	
Cargo Holds	Hatch side coamings			X			X	
	Topside sloping plate			X				

	Upper stool plating			X				
	Cross deck	X						
	Side shell, frames and brackets			X				
	Transverse bulkhead			X			X	
	Hopper tank plating			X				
	Lower stool						X	
	Tank top						X	
Topside Tanks	Underdeck structure	X						
	Side shell and structure	X				X	X	
	Sloping plate and structure						X	
	Webs and bulkheads	X					X	
Hopper Tanks	Hopper sloping plate and structure	X				X		
	Side shell and structure	X						
	Bottom structure						X	
	Webs and bulkheads	X					X	
Double side tanks	Side shell and structure	X						
	Inner skin and structure	X						
	Webs and bulkheads	X						
	Double bottom structure	X					X	
	Upper stool internal structure						X	
	Lower stool internal structure					X	X	
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

For structures that do not apply (do not exist), leave the cell blank.

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content):
Carried SULPHUR UN No.1350 from Indonesia to China for 1806 voyage in July, 2018.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content) (if any).

3. Owner's inspection

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo holds and ballast tanks and void spaces within the cargo area, including peak tanks.

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Tank/ Hold No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Hold and tank History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo holds																	
No.1 Cargo hold	HC-N								X	X				N			
No.2 Cargo hold	HC-N								X	X				N			
No.3 Cargo hold	HC-N								X	X				N			
No.4 Cargo hold	HC-N								X	X				N			
No.5 Cargo hold	HC-N								X	X				N			
Topside tanks																	
Hopper tanks																	
Double side tanks																	
No.1Wing.W.B.T.(P.)	HC-N			X					X	X				N			
No.1Wing.W.B.T.(S.)	HC-N			X					X	X				N			
No.2Wing.W.B.T.(P.)	HC-N			X					X	X				N			
No.2Wing.W.B.T.(S.)	HC-N			X					X	X				N			
No.3Wing.W.B.T.(P.)	HC-N			X					X	X				N			
No.3Wing.W.B.T.(S.)	HC-N			X					X	X				N			
No.4Wing.W.B.T.(P.)	HC-N			X					X	X				N			
No.4Wing.W.B.T.(S.)	HC-N			X					X	X				N			
No.5Wing.W.B.T.(P.)	HC-N			X					X	X				N			
No.5Wing.W.B.T.(S.)	HC-N			X					X	X				N			
Cargo Hold Wash Water Tank(P)	HC-N			X					X	X				N			
Cargo Hold Wash Water Tank(S)	HC-N			X					X	X				N			
Double bottom tanks																	
No.1D.B.W.B.T.(P.)	HC-N			X					X	X				N			
No.1D.B.W.B.T.(S.)	HC-N			X					X	X				N			
No.2D.B.W.B.T.(P.)	HC-N			X					X	X				N			
No.2D.B.W.B.T.(S.)	HC-N			X					X	X				N			
No.3D.B.W.B.T.(P.)	HC-N			X					X	X				N			
No.3D.B.W.B.T.(S.)	HC-N			X					X	X				N			
No.4D.B.W.B.T.(P.)	HC-N			X					X	X				N			
No.4D.B.W.B.T.(S.)	HC-N			X					X	X				N			

No.5D.B.W.B.T.(P.)	HC-N			X					X	X				N			
No.5D.B.W.B.T.(S.)	HC-N			X					X	X				N			
Upper stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
Lower stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
Wing tanks (Ore Tankers)																	
Fore peak	HC-N			X					X		X			N			
Aft peak	HC-N			X					X		X			N			
Miscellaneous other spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature:

Date: January 12, 2020

4. Reports of Port State Control inspections

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
Nil.	When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures. Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.			

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:

Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification
Nil.	If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.		

6. Name and address of the approved thickness measurement firm

Name of firm: Zh**********ering Co.,Ltd.

Address: In **********trict, Guangzhou

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

This Appendix does not apply to the ships constructed in accordance with PART TEN of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	**Minimum renewal thickness**	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**
Note: For bulk carriers designed in accordance with ISC Rules and assigned the class notation of "Strengthened for Heavy Cargoes" and "Grab* (×)", the minimum renewal thickness of inner bottom may be taken as 75%.		

2 For bulk carriers constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

3 For bulk carriers of 150 m in length and upwards, contracted for construction on or after 1 July 1998 and carrying solid bulk cargoes having a density of 1.0 t/m^3 and above, steel renewal is required where the gauged thickness of watertight corrugated bulkheads is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, where t_{net} being net thickness and obtained in accordance with Section 9, Chapter 8 of PART TWO of ISC Rules, except for:

(1) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999;

(2) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 760 mm;

(3) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 1,000 mm.

4 For bulk carriers contracted for construction on or after 1 July 1998 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness of hatch covers is less than t_{net} + 0.5 mm. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, steel renewal is required where the gauged thickness is less than t_{net} or the Surveyor deems it necessary based on the corrosion or deformation. t_{net} is net thickness and to be obtained in accordance with Section 11, Chapter 8 of PART TWO of ISC Rules.

5 For bulk carriers, ore carriers and combination carriers (defined in Appendix 2, Chapter 2 of Part Nine of ISC Rules) contracted for construction on or after 1 January 2004 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness is less than t_{net} + 0.5 mm for single skin hatch cover and pontoon hatch cover platings, hatching coamings and coaming stays. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, thickness measurement is required when ISC Surveyor deems it necessary based on the corrosion or deformation. Where the gauged thickness is less than tnet, the internal structure is to be renewed.

6 For the following bulk carriers of 150 m in length and upwards and carrying solid bulk cargoes having a density of 1.78 t/m^3 and above, steel renewal is required where the gauged thickness of transverse watertight corrugated bulkheads between cargo holds Nos. 1 and 2 is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, with t_{net} being calculated in accordance with IACS UR S19:

(1) Bulk carriers contracted for construction before 1 July 1998 and not complying with IACS UR S18;

(2) Bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999 and not complying with IACS UR S18.

7 For bulk carriers which were not built in accordance with Section 3, Chapter 8 of PART TWO of ISC Rules, steel renewal is required where the gauged thickness of side shell frames of cargo holds is less than t_{REN} mm. Where the gauged thickness is within the range t_{REN} mm and t_{COAT} mm, sand blasting, coating and reinforcements are to be done and the coating is to be maintained in "as-new" or an equivalent condition (i.e. without breakdown or rusting) at special and intermediate surveys. The t_{REN} and t_{COAT} above are to be calculated in accordance with IACS UR S31.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Cross deck plating				
Cross deck stiffeners				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Floors				
Ship side in way of top side tanks				
Plating				
Longitudinals				
Ship side in way of hopper side tanks				
Plating				
Longitudinals				
Ship side in way of tanks (if applicable)				
Plating				
Longitudinals or ordinary transverse frames				
Longitudinal stringers				
Ship side in way of cargo holds				
Plating				
Side frames webs				
Side frames flanges				

If applicable, and (b) is selected in item 10 of the preceding text, the form is to be filled in item by item according to the corrosion criteria given by the classification society for various hull structures.

Upper brackets webs				
Upper brackets flanges				
Lower brackets webs				
Lower brackets flanges				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Upper stool plating				
Upper stool stiffeners				
Lower stool plating				
Lower stool stiffeners				
Transverse web frames in top side tanks				
Plating				
Flanges				
Stiffeners				
Transverse web frames in hopper tanks				
Plating				
Flanges				
Stiffeners				
Hatch covers				
Plating				
Stiffeners				
Hatch coamings				
Plating				
Stiffeners				

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 3 Template of Survey Programme for CSR Double Skin Bulk Carriers

(Note: This annex selects the template of the survey programme of Special Survey No.1 of a 40,000 DWT CSR double-side skin bulk carrier built in 2015 for reference.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR BULK CARRIERS

Basic information and particulars

Ship's name:	ZH*******AI
Kind of Survey:	☒ No.__1__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	97***88
Flag State:	Hong Kong, China
Port of registry:	Hong Kong
Gross tonnage:	24748
Deadweight (metric tonnes):	39746.20
Length between perpendiculars(m):	176.65
Shipbuilder:	Ti********** Shipbuilding Heavy Industry Co.,Ltd.
Hull No.:	NB*****1
Recognized organization (RO):	International Ship Classification
Class No.:	15C***0
Class Character and Notations of Hull:	★ CSA Bulk Carrier, Double Side Skin; CSR; BC-A(Holds Nos. 2&4 may be Empty); COMPASS (D,F); Grab(25); PSPC(B,D); CM; Loading Computer (S, I, G); ESP; In-Water Survey; FTP; BWMP(MEPC.127(53)); GPR
Date of build of the ship:	September 2, 2015
Owner:	ZH********** SHIPPING LIMITED
Thickness measurement firm:	Nil.

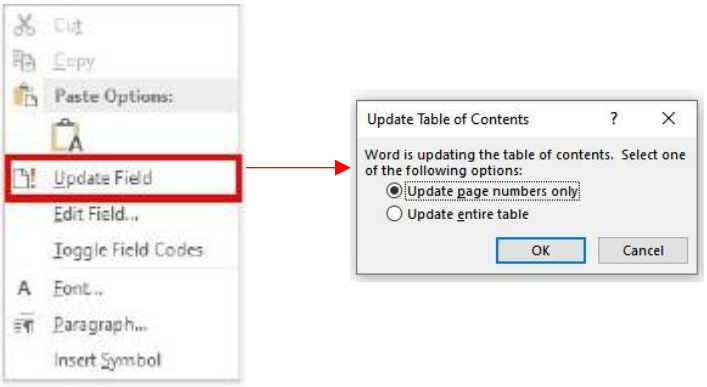
Only fill in class character and notations of hull.

If there is no special requirement for thickness measurement of Special Survey No.1 of bulk carriers, please fill in "Nil."

Symbols : X *Applicable* □ *Not applicable* *Form ESP-BC Ver.4.0 202009*

CONTENTS

Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)①, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of cargo holds, tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

If the form of text is used, the tank/space name, location (left/right) and frame number are at least to be included.

Cargo compartment	Frames Nos.	Dimensions of Hatchways (m)	Capacity Bulk (m)^3	Coating		PMA
				Type *	Color	
NO.1 CARGOHOLD	173~208	16.79x20.78	8801.40	HC	Grey	x
NO.2 CARGOHOLD	135.87~174.13	19.19x20.78	11230.60	HC	Grey	x
NO.3 CARGOHOLD	101~137	19.19x20.77	10470.30	HC	Grey	x
N0.4 CARGOH0LD	63.87~102.13	19.19x20.78	11230.60	HC	Grey	X
N0.5 CARGOH0LD	29~65	19.19x20.78	9672.60	HC	Grey	X

Name	Used For	Frames Nos.	Capacity (m^3)	Coating			PMA	Heating Coils	Type of Tank*
				Type *	Material	Color			
Forepeak Tank	Ballast Water	208~215	754.30	HC D	Epoxy	Grey	X		DSBT
N0.5 B.W.TK(P)	Ballast Water	29~65	1231.00	HC D	Epoxy	Grey	X		DSBT +DSS
N0.4 B.W.TK(P)	Ballast Water	65~101	1063.10	HC D	Epoxy	Grey	X		DSBT +DSS
N0.3 B.W.TK(P)	Ballast Water	101~137	1380.70	HC D	Epoxy	Grey	X		DSBT +DSS
N0.2 B.W.TK(P)	Ballast Water	137~173	1398.10	HC D	Epoxy	Grey	X		DSBT +DSS
N0.1 B.W.TK(P)	Ballast Water	173~208	1387.50	HC D	Epoxy	Grey	X		DSBT +DSS

N0.5 B.W.TK(S)	Ballast Water	29~65	1229.00	HC D	Epoxy	Grey	X		DSBT +DSS
N0.4 B.W.TK(S)	Ballast Water	65~101	1063.10	HC D	Epoxy	Grey	X		DSBT +DSS
N0.3 B.W.TK(S)	Ballast Water	101~137	1380.70	HC D	Epoxy	Grey	X		DSBT +DSS
N0.2 B.W.TK(S)	Ballast Water	137~173	1398.10	HC D	Epoxy	Grey	X		DSBT +DSS
N0.1 B.W.TK(S)	Ballast Water	173~208	1387.50	HC D	Epoxy	Grey	X		DSBT +DSS
Aft Peak Tank	Ballast Water	4.36~8	806.80	HC D	Epoxy	Grey	X		DSBT
F.W.TK(P)	Fresh Water	4.36~4	91.90	HC N	Epoxy	Grey			
F.W.TK(S)	Fresh Water	4.36~4	80.90	HC N	Epoxy	Grey			
D.W.TK.	Fresh Water	2~4	11.00	HC N	Epoxy	Grey			
No.1 H.F.0.TK(P)	Fuel 0il	65~101	167.00	NP				X	
No.1 H.F.0.TK(S)	Fuel 0il	65~101	167.00	NP				X	
No.2 H.F.O.TK(P)	Fuel Oil	26~65	183.50	NP				X	
No.2 H.F.O.TK(S)	Fuel Oil	26~65	183.50	NP				X	
No.3 H.F.O.TK(P)	Fuel Oil	19~28	206.40	NP				X	
No.3 H.F.O.TK(S)	Fuel Oil	20~28	280.00	NP				X	
No.1 H.F.O.Service TK	Fuel Oil	15~17	36.00	NP				X	
No.2 H.F.O.Service TK	Fuel Oil	11~13	28.50	NP				X	
No.1 H.F.O.Settling TK	Fuel Oil	17~19	39.10	NP				X	
No.2 H.F.O.Settling TK	Fuel Oil	13~15	32.70	NP				X	
H.F.O.Overflow TK	Fuel Oil	11~20	37.60	NP				X	
L.S.H.F.O.Storage TK	Fuel Oil	12~20	143.50	NP				X	
M.D.O.Storage TK	Diesel Oil	5~9	49.90	NP					

L.S.M.D.O.Storage TK	Diesel Oil	5~11	73.20	NP					
No.1 M.D.O.SERVICE TK	Diesel Oil	5~7	18.10	NP				X	
No.2 M.D.O.SERVICE TK	Diesel Oil	5~7	13.50	NP				X	
L.O.Sump TK	Lub. Oil	17~25	14.60	NP					
Leakage Oil TK	Lub. Oil	18~24	8.00	NP					
Waste Oil TK	Lub. Oil	24~29	15.90	NP					
A.E.L.O.Overflow TK	Lub. Oil	5~9	9.60	NP					
M.E.L.O.Settling TK	Lub. Oil	5~9	16.80	NP				X	
A.E.Sys.O.Storage TK	Lub. Oil	5~9	23.90	NP					
Cyl.O.L.S.Storage TK	Lub. Oil	5~10	23.50	NP					
Cyl.O.H.S.Storage TK	Lub. Oil	5~10	22.90	NP					
M.E.Sys.O.Storage TK	Lub. Oil	5~10	33.00	NP					
Stern Tube Sump Tk	Lub. Oil	8~9	1.10	NP					
Cooling Water Tk	Miscellaneous	5~8	5.90	HC N	Epoxy	Grey			
Cooling Water Drain TK	Miscellaneous	30~35	21.00	HC N	Epoxy	Grey			
Feed Water Drain Tk	Miscellaneous	9~12	8.50	HC N	Epoxy	Grey			
Scavenge air cooler Drain	Miscellaneous	12~15	14.20	HC N	Epoxy	Grey			
Dirty Water P	Miscellaneous	68~101	153.30	HC N	Epoxy	Grey			
Dirty Water S	Miscellaneous	68~101	153.30	HC N	Epoxy	Grey			
Grey Water TK	Grey Water	17~20	42.00	HC N	Epoxy	Grey			
Black Water TK	Black Water	14~17	33.00	HC N	Epoxy	Grey			
Void Below E/R	Void Space	15~32	85.10	HC N	Epoxy	Grey			
Cofferdam P	Void Space	11~29	272.30	HC N	Epoxy	Grey			
Cofferdam S	Void Space	5~29	391.70	HC N	Epoxy	Grey			

Cofferdam Aft P	Void Space	5~9	42.70	HC N	Epoxy	Grey			
Void (HFO 2P)	Void Space	29~68	109.60	HC N	Epoxy	Grey			
Void (HFO 2S)	Void Space	29~68	109.60	HC N	Epoxy	Grey			
Stool Trunk (Hold4/5)	Void Space	62~66.7	149.80	HC N	Epoxy	Grey			
Stool Trunk(Hold3/4)	Void Space	99~104	139.60	HC N	Epoxy	Grey			
Stool Trunk(Hold2/3)	Void Space	134~139	149.80	HC N	Epoxy	Grey			
Stooltrunk(Hold1/2)	Void Space	171~176	149.80	HC N	Epoxy	Grey			
Void FWD	Void Space	208~220.63	910.50	HC N	Epoxy	Grey			
Valve Cofferdam(Fr.101~104)	Void Space	101~104	31.00	HC N	Epoxy	Grey			
Valve Cofferdam(Fr.173~176)	Void Space	173~176	32.00	HC N	Epoxy	Grey			
Sludge tank	Miscellaneous	11~20	37.90	NP					
Bilge water Collecting	Miscellaneous	1S~33	31.50	HC N	Epoxy	Grey			
No.3 Cargohold	Ballast Water	101~137	10470.30	HC N	Epoxy	Grey	X		

3. List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the cargo holds and ballast tanks of the ship, the extent of coatings and the corrosion prevention system provided in the Survey Planning Questionnaire.

Tank/ Hold No.	**Corrosion Protection ①**					**Coating Extent ②**				**Coating Condition ③**			
	HC	**SH**	**SC**	**A**	**NP**	**U**	**M**	**L**	**C**	**G**	**F**	**P**	**RC**

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)

SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:
(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Cargo holds, tanks and spaces shall be safe for access. Cargo holds, tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access shall be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating shall be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							

Cargo Holds	Hatch side coamings							
	Topside sloping plate							
	Upper stool plating							
	Cross deck							
	Side shell, frames and brackets							
	Transverse bulkhead							
	Hopper tank plating							
	Lower stool							
	Tank top							
Topside Tanks	Underdeck structure							
	Side shell and structure							
	Sloping plate and structure							
	Webs and bulkheads							
Hopper Tanks	Hopper sloping plate and structure							
	Side shell and structure							
	Bottom structure							
	Webs and bulkheads							
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure							
	Upper stool internal structure							
	Lower stool internal structure							
Wing tanks of ore carriers	Underdeck and structure							

	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

5.2.1 For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Portable ladders;

(e) Boats or rafts; and/or

(f) Other equivalent means.

5.2.2 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers less than 100,000 dwt, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Portable ladder restricted to not more than 5m in length may be accepted for surveys of lower section of a shell frame including bracket;

(d) Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

(e) Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

(f) Other equivalent means.

5.2.3 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers of 100,000 dwt and above, the use of portable ladders shall not be accepted and one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Annual surveys, intermediate survey under 10 years of age and first special survey:

- Permanent staging and passages through structures;

- Temporary staging and passages through structures;

- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

(b) Subsequent intermediate surveys and special surveys:

- Either permanent or temporary staging and passages through structures for close-up survey of at least the upper part of hold frames;

- Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging;

- Lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

5.3 Notwithstanding the above requirements, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the "close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames, including approximately lower one third length of side frame at side shell and side frame and attachment and the adjacent shell plating of the forward cargo hold" at annual survey.

5.4 The use of hydraulic arm vehicles or aerial lifts ("cherry pickers") may be accepted by the attending surveyor for the close-up survey of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17 m.

6. List of equipment for survey

This section of the survey programme shall identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment

- Ultrasonic equipment

- Magnetic particle equipment

- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Holds:

NO.1-5 CARGO HOLDS

(2) Ballast Tanks:

NO.1-5 B.W.TK.(P&S), Forepeak Tank, Aft Peak Tank, NO.3 CARGO HOLD

(3) Fuel Oil Tanks:

(4) Lube Oil Tanks:

Considering that there is generally no lube oil tank or fresh water tank in the cargo length area, (4) and (5) need not be filled in here.

(5) Fresh Water Tanks:

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo holds, cofferdams, pipe tunnels, double side tanks (if fitted) and void spaces bounding cargo holds, and fuel oil tanks within the cargo length area and all ballast tanks. The internal examination of fuel oil tanks within the cargo length area is to be conducted in accordance with 5.4.4.2(2) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

(6) Other Tanks/ Spaces:

Trunk, Cofferdam, Voids

The following are to be filled in except (1) to (5) but not limited to: pipe tunnels, void spaces and LNG ready spaces in VLOC.

7.2 Close-up survey

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

A) One transverse web with associated plating and longitudinals in two representative ballast tanks of each type (This is to include the foremost topside and double side ballast tanks on either side)

B) Two selected cargo hold transverse bulkheads, including internal structure of upper and lower stools

C) All cargo hold hatch covers and coamings (platings and stiffeners)

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Ballast Tanks:	NO.1-5 B.W.TK.(P&S), Forepeak Tank, Aft Peak Tank
Cargo Holds used for water ballast:	NO.3 CARGO HOLD ← Storm ballast tank
Fuel Oil Tanks:	
Lube Oil Tanks:	
Fresh Water Tanks:	
Others: (if any)	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of ballast holds are to be tested with a head of liquid to near to the top of hatches.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

Nil.

10. Minimum thickness of hull structures

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☐ For non-CSR Bulk Carriers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Bulk Carrier, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

Note that the selection here is to correspond to Appendix 3 below. For CSR ships, leave it blank here.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No damages reported to ISC					

If unavailable, fill in "No damages reported to ISC"

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

Refer to approved Structure Access Manual (No. **********)

This is not to be left blank and can be referred to the approved Structure Access Manual.

List of Critical Areas for Bulk Carriers		
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	connections of longitudinals to transverse web frames and transverse bulkheads
Bulk Carriers	Topside tanks	corners of transverse web frames
Bulk Carriers (Single hull)	Topside tanks/ Hopper tanks/ Cargo holds	connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks

Bulk Carriers	Cargo holds	connections of hatch end beam to topside tank web frame
Carriers (Single hull)	Cargo holds/ Hopper tanks/ Double-bottom tanks	welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Bulk Carriers/ Ore Carriers	Cargo holds	connections of corrugated bulkhead, shelf and stool plating
Bulk Carriers/ Ore Carriers	Cargo holds	connections of lower stool plating to the inner bottom
Bulk Carriers/ Ore Carriers	Main deck	web or deck at the toes of the longitudinal hatch coaming termination bracket
Bulk Carriers/ Ore Carriers	Main deck	hatch corners
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	transverse bulkhead adjacent to heated fuel oil tank (if fitted)
Ore Carriers	Wing tanks	connections of deck transverse in way of sheer strake and longitudinal bulkhead top strake
Ore Carriers	Wing tanks	corners of cross ties and floors
Ore Carriers	Wing tanks	connection of horizontal stringer on transverse bulkhead and side shell longitudinal
Ore Carriers	Cargo holds/Wing tanks	connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors
Ore Carriers	Cargo holds	connections of deck transverses to deck girders
Ore Carriers	Cargo holds	connections of deck girders to hatch end beam
Ore Carriers	Cargo holds	connections of the upper stool sloping plating to the deck plating

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS), shall be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ----------☐

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.*----------☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: June 5, 2020 (.....)

(name and signature of authorized owner's representative)

Date: June 8, 2020 (….....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo holds and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Hatch Covers & Hatch Coaming Construction
8	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR BULK CARRIER
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	ZH*******AI
IMO number:	97***88
Flag State:	Hong Kong, China
Port of registry:	Hong Kong
Owner:	ZH********** SHIPPING LIMITED
Recognized organization:	International Ship Classification
Gross tonnage:	39746.20
Deadweight (metric tonnes):	176.65
Date of build:	September 2, 2015

Input basic information and parameters.

2. Information on access provision for close-up surveys and thickness measurement

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak	X				X	X	
A.P.	Aft Peak	X				X	X	
Cargo Holds	Hatch side coamings						X	
	Topside sloping plate			X				

	Upper stool plating			X				
	Cross deck	X						
	Side shell, frames and brackets			X				
	Transverse bulkhead			X			X	
	Hopper tank plating			X				
	Lower stool						X	
	Tank top						X	
Topside Tanks	Underdeck structure	X						
	Side shell and structure	X					X	
	Sloping plate and structure						X	
	Webs and bulkheads	X					X	
Hopper Tanks	Hopper sloping plate and structure	X				X		
	Side shell and structure	X						
	Bottom structure						X	
	Webs and bulkheads	X					X	
Double side tanks	Side shell and structure	X						
	Inner skin and structure	X						
	Webs and bulkheads	X						
	Double bottom structure	X					X	
	Upper stool internal structure						X	
	Lower stool internal structure					X	X	
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

For structures that do not apply (do not exist), leave the cell blank.

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content):
Nil.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content) (if any).

3. Owner's inspection

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo holds and ballast tanks and void spaces within the cargo area, including peak tanks.

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Tank/ Hold No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Hold and tank History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo holds																	
NO.1 CARGO HOLDS	HC-N								X	X				N			
NO.2 CARGO HOLDS	HC-N								X	X				N			
NO.3 CARGO HOLDS	HC-N								X	X				N			
NO.4 CARGO HOLDS	HC-N								X	X				N			
NO.5 CARGO HOLDS	HC-N								X	X				N			
Topside tanks																	
Hopper tanks																	
Double side tanks																	
NO.1 B.W.TK.(P)	HC-D								X	X				N			
NO.1 B.W.TK.(S)	HC-D								X	X				N			
NO.2 B.W.TK.(P)	HC-D								X	X				N			
NO.2 B.W.TK.(S)	HC-D								X	X				N			
NO.3 B.W.TK.(P)	HC-D								X	X				N			
NO.3 B.W.TK.(S)	HC-D								X	X				N			
NO.4 B.W.TK.(P)	HC-D								X	X				N			
NO.4 B.W.TK.(S)	HC-D								X	X				N			
NO.5 B.W.TK.(P)	HC-D								X	X				N			
NO.5 B.W.TK.(S)	HC-D								X	X				N			
Double bottom tanks																	
NO.1 B.W.TK.(P)	HC-D								X	X				N			
NO.1 B.W.TK.(S)	HC-D								X	X				N			
NO.2 B.W.TK.(P)	HC-D								X	X				N			
NO.2 B.W.TK.(S)	HC-D								X	X				N			
NO.3 B.W.TK.(P)	HC-D								X	X				N			
NO.3 B.W.TK.(S)	HC-D								X	X				N			
NO.4 B.W.TK.(P)	HC-D								X	X				N			
NO.4 B.W.TK.(S)	HC-D								X	X				N			
NO.5 B.W.TK.(P)	HC-D								X	X				N			
NO.5 B.W.TK.(S)	HC-D								X	X				N			

Upper stools																	
No.2 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.3 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.4 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.5 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
Lower stools																	
No.2 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.3 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.4 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
No.5 cargo hold FWD	**HC-N**								**X**	**X**				**N**			
Wing tanks (Ore Tankers)																	
Fore peak	**HC-B**			**X**					**X**		**X**			**N**			
Aft peak	**HC-B**			**X**					**X**		**X**			**N**			
Miscellaneous other spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature:

Date: May 12, 2020

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
Nil.				

When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures.

Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:

Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification
Nil.			

If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.

6. Name and address of the approved thickness measurement firm

Name of firm: Nil.

Address:

If there is no special requirement for thickness measurement of Special Survey No.1 of bulk carriers, please fill in "Nil."

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

——N/A

This Appendix does not apply to the ships constructed in accordance with PART TEN of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

Note that the selection here is to correspond to item 10 and the general Appendix above. This corrosion criterion does not apply to CSR ships, where "N/A" is to be marked at the appropriate location.

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	**Minimum renewal thickness**	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**
Note: For bulk carriers designed in accordance with ISC Rules and assigned the class notation of "Strengthened for Heavy Cargoes" and "Grab* (×)", the minimum renewal thickness of inner bottom may be taken as 75%.		

2 For bulk carriers constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

3 For bulk carriers of 150 m in length and upwards, contracted for construction on or after 1 July 1998 and carrying solid bulk cargoes having a density of 1.0 t/m^3 and above, steel renewal is required where the gauged thickness of watertight corrugated bulkheads is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, where t_{net} being net thickness and obtained in accordance with Section 9, Chapter 8 of PART TWO of ISC Rules, except for:

(1) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999;

(2) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 760 mm;

(3) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 1,000 mm.

4 For bulk carriers contracted for construction on or after 1 July 1998 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness of hatch covers is less than t_{net} + 0.5 mm. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, steel renewal is required where the gauged thickness is less than t_{net} or the Surveyor deems it necessary based on the corrosion or deformation. t_{net} is net thickness and to be obtained in accordance with Section 11, Chapter 8 of PART TWO of ISC Rules.

5 For bulk carriers, ore carriers and combination carriers (defined in Appendix 2, Chapter 2 of Part Nine of ISC Rules) contracted for construction on or after 1 January 2004 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness is less than t_{net} + 0.5 mm for single skin hatch cover and pontoon hatch cover platings, hatching coamings and coaming stays. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, thickness measurement is required when ISC Surveyor deems it necessary based on the corrosion or deformation. Where the gauged thickness is less than tnet, the internal structure is to be renewed.

6 For the following bulk carriers of 150 m in length and upwards and carrying solid bulk cargoes having a density of 1.78 t/m^3 and above, steel renewal is required where the gauged thickness of transverse watertight corrugated bulkheads between cargo holds Nos. 1 and 2 is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, with t_{net} being calculated in accordance with IACS UR S19:

(1) Bulk carriers contracted for construction before 1 July 1998 and not complying with IACS UR S18;

(2) Bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999 and not complying with IACS UR S18.

7 For bulk carriers which were not built in accordance with Section 3, Chapter 8 of PART TWO of ISC Rules, steel renewal is required where the gauged thickness of side shell frames of cargo holds is less than t_{REN} mm. Where the gauged thickness is within the range t_{REN} mm and t_{COAT} mm, sand blasting, coating and reinforcements are to be done and the coating is to be maintained in "as-new" or an equivalent condition (i.e. without breakdown or rusting) at special and intermediate surveys. The t_{REN} and t_{COAT} above are to be calculated in accordance with IACS UR S31.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

——N/A

Note that the selection here is to correspond to item 10 and the general Appendix above. This corrosion criterion does not apply to CSR ships, where "N/A" is to be marked at the appropriate location.

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Cross deck plating				
Cross deck stiffeners				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Floors				
Ship side in way of top side tanks				
Plating				
Longitudinals				
Ship side in way of hopper side tanks				
Plating				
Longitudinals				
Ship side in way of tanks (if applicable)				
Plating				
Longitudinals or ordinary transverse frames				
Longitudinal stringers				
Ship side in way of cargo holds				
Plating				
Side frames webs				
Side frames flanges				

Upper brackets webs				
Upper brackets flanges				
Lower brackets webs				
Lower brackets flanges				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Upper stool plating				
Upper stool stiffeners				
Lower stool plating				
Lower stool stiffeners				
Transverse web frames in top side tanks				
Plating				
Flanges				
Stiffeners				
Transverse web frames in hopper tanks				
Plating				
Flanges				
Stiffeners				
Hatch covers				
Plating				
Stiffeners				
Hatch coamings				
Plating				
Stiffeners				

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 4 Template of Survey Programme for Ore Carriers

(Note: This annex selects the template of the survey programme of Special Survey No.2 of a 300,000 DWT very large ore carrier built in 2009 for reference.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR BULK CARRIERS

Basic information and particulars

Ship's name:	H*******NG
Kind of Survey:	☒ No.__2__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	9******45
Flag State:	Hong Kong, China
Port of registry:	Hong Kong
Gross tonnage:	152148
Deadweight (metric tonnes):	297738.00
Length between perpendiculars(m):	321.50
Shipbuilder:	Na********** Ship Engineering Co., Ltd.
Hull No.:	N***8
Recognized organization (RO):	International Ship Classification
Class No.:	09W***7
Class Character and Notations of Hull:	★ CSA Ore Carrier;Loading Computer (S, I); ESP; In-Water Survey
Date of build of the ship:	October 2, 2009
Owner:	Ga**********pping Limited
Thickness measurement firm:	Zh********** Engineering Co.,Ltd.

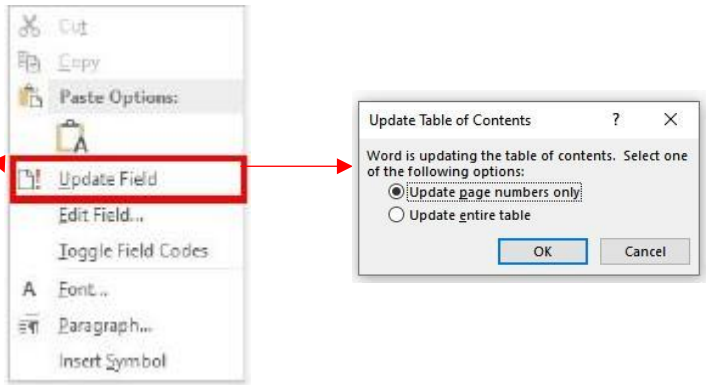
Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : X *Applicable* □ *Not applicable* *Form ESP-BC Ver.4.0 202009*

CONTENTS

Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo length area, cargo holds, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

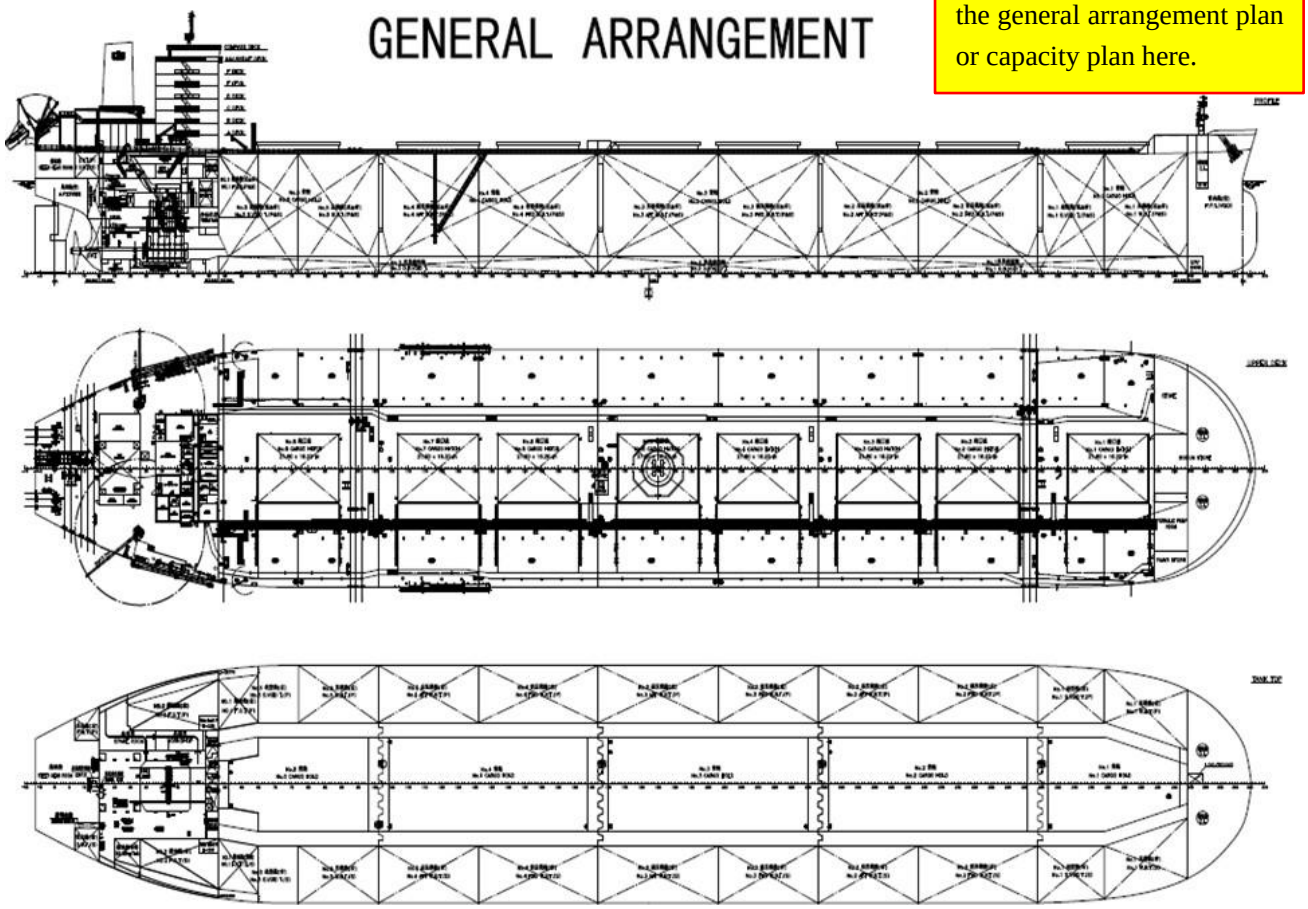
1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)①, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of cargo holds, tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of cargo holds, tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.



3. List of cargo holds, tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme should indicate any changes relating to (and should update) the information on the use of the cargo holds and ballast tanks of the ship, the extent of coatings and the corrosion prevention system provided in the Survey Planning Questionnaire.

Tank/ Hold No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Cargo holds, tanks and spaces shall be safe for access. Cargo holds, tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access shall be provided for the surveyor to verify

the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating shall be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Cargo Holds	Hatch side coamings							
	Topside sloping plate							
	Upper stool plating							
	Cross deck							
	Side shell, frames and brackets							
	Transverse bulkhead							
	Hopper tank plating							
	Lower stool							
	Tank top							
Topside Tanks	Underdeck structure							
	Side shell and structure							
	Sloping plate and structure							
	Webs and bulkheads							
Hopper Tanks	Hopper sloping plate and structure							
	Side shell and structure							
	Bottom structure							

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

	Webs and bulkheads							
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure							
	Upper stool internal structure							
	Lower stool internal structure							
Wing tanks of ore carriers	Underdeck and structure							
	Side shell and structure							
	Side shell vertical web and structure							
	Longitudinal bulkhead and structure							
	Longitudinal bulkhead web and structure							
	Bottom plating and structure							
	Cross ties/stringers							

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

5.2.1 For close-up surveys of the hull structure, other than cargo hold shell frames, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Portable ladders;

(e) Boats or rafts; and/or

(f) Other equivalent means.

5.2.2 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers less than 100,000 dwt, one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Portable ladder restricted to not more than 5m in length may be accepted for surveys of lower section of a shell frame including bracket;

(d) Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

(e) Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

(f) Other equivalent means.

5.2.3 For close-up surveys of the cargo hold shell frames of single-side skin bulk carriers of 100,000 dwt and above, the use of portable ladders shall not be accepted and one or more of the following means for access, acceptable to the surveyor, shall be provided:

(a) Annual surveys, intermediate survey under 10 years of age and first special survey:

- Permanent staging and passages through structures;

- Temporary staging and passages through structures;

- Hydraulic arm vehicles such as conventional cherry pickers, lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

(b) Subsequent intermediate surveys and special surveys:

- Either permanent or temporary staging and passages through structures for close-up survey of at least the upper part of hold frames;

- Hydraulic arm vehicles such as conventional cherry pickers for surveys of lower and middle part of shell frames as alternative to staging;

- Lifts and movable platforms;

- Boats or rafts provided the structural capacity of the hold is sufficient to withstand static loads at all levels of water; and/or

- Other equivalent means.

5.3 Notwithstanding the above requirements, the use of a portable ladder fitted with a mechanical device to secure the upper end of the ladder is acceptable for the "close-up examination of sufficient extent, minimum 25% of frames, to establish the condition of the lower region of the shell frames, including approximately lower one third length of side frame at side shell and side frame and attachment and the adjacent shell plating of the forward cargo

hold" at annual survey.

5.4 The use of hydraulic arm vehicles or aerial lifts ("cherry pickers") may be accepted by the attending surveyor for the close-up survey of the upper part of side shell frames or other structures in all cases where the maximum working height is not more than 17 m.

6. List of equipment for survey

This section of the survey programme shall identify and list the equipment that will be made available for carrying out the survey and the required thickness measurements.

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Holds:

NO.1-6 CARGO HOLDS

(2) Ballast Tanks:

No.1-6 W.B.T.(P&S), A.P.T.

(3) Fuel Oil Tanks:

(4) Lube Oil Tanks:

Considering that there is generally no lube oil tank or fresh water tank in the cargo length area, (4) and (5) need not be filled in here.

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo holds, cofferdams, pipe tunnels, double side tanks (if fitted) and void spaces bounding cargo holds, and fuel oil tanks within the cargo length area and all ballast tanks. The internal examination of fuel oil tanks within the cargo length area is to be conducted in accordance with 5.4.4.2(2) of Chapter 5, PART ONE of ISC Rules for Classification of Sea-Going Steel Ships.

(5) Fresh Water Tanks:

(6) Other Tanks/ Spaces:

D.B. Void Space, Side Void Space(P&S)

The following are to be filled in except (1) to (5) but not limited to: pipe tunnels, void spaces and LNG ready spaces in VLOC.

7.2 Close-up survey

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A) All web frame rings complete including adjacent structural members in a ballast wing tank.
B) One deck transverse including adjacent deck structural members in each remaining ballast tank.
C) Forward and aft transverse bulkheads complete, including girder system and adjacent structural members in a ballast wing tank.
D) One transverse bulkhead lower part, including girder system and adjacent structural members in each remaining ballast tank.
E) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools, where fitted.
F) All cargo hold hatch covers and coamings (plating and stiffeners).
G) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Ballast Tanks:	No.1-6 W.B.T.(P&S), A.P.T.
Cargo Holds used for water ballast:	
Fuel Oil Tanks:	

Lube Oil Tanks:	
Fresh Water Tanks:	
Others: (if any)	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of ballast holds are to be tested with a head of liquid to near to the top of hatches.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1. Within the cargo length:

A) Two transverse sections of deck plating outside line of cargo hatch openings.

2. Wind and water strakes in way of the two transverse sections considered above and Selected wind and water strakes outside the cargo length area.

3. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:

A) All web frame rings complete including adjacent structural members in a ballast wing tank.

B) One deck transverse including adjacent deck structural members in each remaining ballast tank.

C) Forward and aft transverse bulkheads complete, including girder system and adjacent structural members in a ballast wing tank.

D) One transverse bulkhead lower part, including girder system and adjacent structural members in each remaining ballast tank.

E) One transverse bulkhead in each cargo hold, including internal structure of upper and lower stools, where fitted.

F) All cargo hold hatch covers and coamings (plating and stiffeners).

G) All deck plating and under deck structure inside line of hatch openings between all cargo hold hatches.

10. Minimum thickness of hull structures

Note that the selection here is to correspond to Appendix 3 below.

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☒ For non-CSR Bulk Carriers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Bulk Carrier, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness

For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

measurement firm provided in the survey planning questionnaire.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No.4 B.W.T.(P/S), No.3 B.W.T.(S)		Cracks found on the transverse web plating of similar position, near the hull bilge, under the nail of the stiffeners of transverse web	NO.4BWT(P&S)Fr.75,NO.3BWT(S)Fr.83	Permanently Repair	April 25, 2017

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Cargo Hold, tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No damages reported to ISC					

If unavailable, fill in “No damages reported to ISC”

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

This is not to be left blank and can be referred to the approved Structure Access Manual.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

Refer to the **SHIP STRUCTURAL ACCESS MANUAL**(Drawing No.11-921-100)

List of Critical Areas for Bulk Carriers		
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	connections of longitudinals to transverse web frames and transverse bulkheads
Bulk Carriers	Topside tanks	corners of transverse web frames
Bulk Carriers (Single hull)	Topside tanks/ Hopper tanks/ Cargo holds	connections of hold side frames to topside tanks and hopper tanks, including corresponding brackets in topside tanks and hopper tanks
Bulk Carriers	Cargo holds	connections of hatch end beam to topside tank web frame
Carriers (Single hull)	Cargo holds/ Hopper tanks/ Double-bottom tanks	welded or radiused knuckle between inner bottom and hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Bulk Carriers/ Ore Carriers	Cargo holds	connections of corrugated bulkhead, shelf and stool plating
Bulk Carriers/ Ore Carriers	Cargo holds	connections of lower stool plating to the inner bottom
Bulk Carriers/ Ore Carriers	Main deck	web or deck at the toes of the longitudinal hatch coaming termination bracket
Bulk Carriers/ Ore Carriers	Main deck	hatch corners
Bulk Carriers/ Ore Carriers	Topside tanks/ Hopper tanks/ Double-bottom tanks/ Double-side tanks	transverse bulkhead adjacent to heated fuel oil tank (if fitted)

Ore Carriers	Wing tanks	connections of deck transverse in way of sheer strake and longitudinal bulkhead top strake
Ore Carriers	Wing tanks	corners of cross ties and floors
Ore Carriers	Wing tanks	connection of horizontal stringer on transverse bulkhead and side shell longitudinal
Ore Carriers	Cargo holds/Wing tanks	connection between inner bottom plating and longitudinal bulkhead lower strake, particularly connected longitudinal bulkhead vertical web, double bottom side girders and floors
Ore Carriers	Cargo holds	connections of deck transverses to deck girders
Ore Carriers	Cargo holds	connections of deck girders to hatch end beam
Ore Carriers	Cargo holds	connections of the upper stool sloping plating to the deck plating

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo holds and ballast tanks (scantling drawings), including information regarding use of high tensile steel (HTS), shall be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ☒

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.* ☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: August 16, 2019 (.....)

(name and signature of authorized owner's representative)

Date: August 20, 2019 (….....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo holds and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for hold transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Hatch Covers & Hatch Coaming Construction
8	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR BULK CARRIER
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	H*******NG
IMO number:	9******45
Flag State:	Hong Kong, China
Port of registry:	Hong Kong
Owner:	Ga**********pping Limited
Recognized organization:	International Ship Classification
Gross tonnage:	152148
Deadweight (metric tonnes):	297738.00
Date of build:	October 2, 2009

Input basic information and parameters.

2. Information on access provision for close-up surveys and thickness measurement

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Hold/Tank No.	Structure	Permanent Means of Access	Temporary staging	Hydraulic arm vehicles	Rafts	Ladders	Direct Access	Other means (please specify)
F.P.	Fore Peak	X				X	X	
A.P.	Aft Peak	X				X	X	
Cargo Holds	Hatch side coamings		X				X	
	Topside sloping plate							

	Upper stool plating		X					
	Cross deck	X						
	Side shell, frames and brackets							
	Transverse bulkhead		X					
	Hopper tank plating							
	Lower stool		X			X	X	
	Tank top						X	
Topside Tanks	Underdeck structure							
	Side shell and structure							
	Sloping plate and structure							
	Webs and bulkheads							
Hopper Tanks	Hopper sloping plate and structure							
	Side shell and structure							
	Bottom structure							
	Webs and bulkheads							
Double side tanks	Side shell and structure							
	Inner skin and structure							
	Webs and bulkheads							
	Double bottom structure	X					X	
	Upper stool internal structure					X	X	
	Lower stool internal structure					X	X	
Wing tanks of ore carriers	Underdeck and structure	X						
	Side shell and structure	X				X		
	Side shell vertical web and structure	X				X		
	Longitudinal bulkhead and structure	X				X		
	Longitudinal bulkhead web and structure	X				X		
	Bottom plating and structure						X	
	Cross ties/stringers						X	

For structures that do not apply (do not exist), leave the cell blank.

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content):
Nil.

History of bulk cargoes of a corrosive nature (e.g. high sulphur content) (if any).

3. Owner's inspection

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo holds and ballast tanks and void spaces within the cargo area, including peak tanks.

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Tank/ Hold No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Hold and tank History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo holds																	
NO.1 CARGO HOLDS	HC-N								X	X				N			
NO.2 CARGO HOLDS	HC-N								X	X				N			
NO.3 CARGO HOLDS	HC-N								X	X				N			
NO.4 CARGO HOLDS	HC-N								X	X				N			
NO.5 CARGO HOLDS	HC-N								X	X				N			
NO.6 CARGO HOLDS	HC-N								X	X				N			
Topside tanks																	
Hopper tanks																	
Double side tanks																	
Double bottom tanks																	
D.B. Void Space	HC-N								X	X				N			
Upper stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
No.6 cargo hold FWD	HC-N								X	X				N			
Lower stools																	
No.2 cargo hold FWD	HC-N								X	X				N			
No.3 cargo hold FWD	HC-N								X	X				N			
No.4 cargo hold FWD	HC-N								X	X				N			
No.5 cargo hold FWD	HC-N								X	X				N			
No.6 cargo hold FWD	HC-N								X	X				N			
Wing tanks (Ore Tankers)																	

No.1 W.B.T.(P)	HC-N			X					X	X				N			
No.1 W.B.T.(S)	HC-N			X					X	X				N			
No.2 W.B.T.(P)	HC-N			X					X	X				N			
No.2 W.B.T.(S)	HC-N			X					X	X				N			
No.3 W.B.T.(P)	HC-N			X					X	X				N			
No.3 W.B.T.(S)	HC-N			X					X	X				N	X		
No.4 W.B.T.(P)	HC-N			X					X	X				N	X		
No.4 W.B.T.(S)	HC-N			X					X	X				N	X		
No.5 W.B.T.(P)	HC-N			X					X	X				N			
No.5 W.B.T.(S)	HC-N			X					X	X				N			
No.6 W.B.T.(P)	HC-N			X					X	X				N			
No.6 W.B.T.(S)	HC-N			X					X	X				N			
Fore peak	HC-N								X		X			N			
Aft peak	HC-N			X					X		X			N			
Miscellaneous other spaces																	

The tanks are marked here with a history of damage and repair, which is consistent with 12 of the survey programme above.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-D: Hard coating applied in double-side skin spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature: .....

Date: **July 1, 2019**

4. Reports of Port State Control inspections

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.
Nil.				

		When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures. Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:			
Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification
Nil.		If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.	

6. Name and address of the approved thickness measurement firm

Name of firm: Zh********** Engineering Co.,Ltd.

Address: In********** *****Co., Ltd., ******* District, Guangzhou

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

This Appendix does not apply to the ships constructed in accordance with PART TEN of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	**Minimum renewal thickness**	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**
Note: For bulk carriers designed in accordance with ISC Rules and assigned the class notation of "Strengthened for Heavy Cargoes" and "Grab* (×)", the minimum renewal thickness of inner bottom may be taken as 75%.		

2 For bulk carriers constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

3 For bulk carriers of 150 m in length and upwards, contracted for construction on or after 1 July 1998 and carrying solid bulk cargoes having a density of 1.0 t/m^3 and above, steel renewal is required where the gauged thickness of watertight corrugated bulkheads is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, where t_{net} being net thickness and obtained in accordance with Section 9, Chapter 8 of PART TWO of ISC Rules, except for:

(1) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999;

(2) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 760 mm;

(3) double skin bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 January 2000, with distance between inner and outer skins being not less than 1,000 mm.

4 For bulk carriers contracted for construction on or after 1 July 1998 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness of hatch covers is less than t_{net} + 0.5 mm. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, steel renewal is required where the gauged thickness is less than t_{net} or the Surveyor deems it necessary based on the corrosion or deformation. t_{net} is net thickness and to be obtained in accordance with Section 11, Chapter 8 of PART TWO of ISC Rules.

5 For bulk carriers, ore carriers and combination carriers (defined in Appendix 2, Chapter 2 of Part Nine of ISC Rules) contracted for construction on or after 1 January 2004 and complying with Section 11, Chapter 8, PART TWO of ISC Rules, steel renewal is required where the gauged thickness is less than t_{net} + 0.5 mm for single skin hatch cover and pontoon hatch cover platings, hatching coamings and coaming stays. Where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal. For internal members of pontoon hatch covers, thickness measurement is required when ISC Surveyor deems it necessary based on the corrosion or deformation. Where the gauged thickness is less than tnet, the internal structure is to be renewed.

6 For the following bulk carriers of 150 m in length and upwards and carrying solid bulk cargoes having a density of 1.78 t/m^3 and above, steel renewal is required where the gauged thickness of transverse watertight corrugated bulkheads between cargo holds Nos. 1 and 2 is less than t_{net} + 0.5 mm and coating (applied in accordance with the coating manufacturer's requirements) or annual gauging may be adopted as an alternative to steel renewal where the gauged thickness is within the range t_{net} + 0.5 mm and t_{net} + 1.0 mm, with t_{net} being calculated in accordance with IACS UR S19:

(1) Bulk carriers contracted for construction before 1 July 1998 and not complying with IACS UR S18;

(2) Bulk carriers the keels of which were laid or which were at a similar stage of construction before 1 July 1999 and not complying with IACS UR S18.

7 For bulk carriers which were not built in accordance with Section 3, Chapter 8 of PART TWO of ISC Rules, steel renewal is required where the gauged thickness of side shell frames of cargo holds is less than t_{REN} mm. Where the gauged thickness is within the range t_{REN} mm and t_{COAT} mm, sand blasting, coating and reinforcements are to be done and the coating is to be maintained in "as-new" or an equivalent condition (i.e. without breakdown or rusting) at special and intermediate surveys. The t_{REN} and t_{COAT} above are to be calculated in accordance with IACS UR S31.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Cross deck plating				
Cross deck stiffeners				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Floors				
Ship side in way of top side tanks				
Plating				
Longitudinals				
Ship side in way of hopper side tanks				
Plating				
Longitudinals				
Ship side in way of tanks (if applicable)				
Plating				
Longitudinals or ordinary transverse frames				
Longitudinal stringers				
Ship side in way of cargo holds				
Plating				
Side frames webs				
Side frames flanges				

If applicable, and (b) is selected in item 10 of the preceding text, the form is to be filled in item by item according to the corrosion criteria given by the classification society for various hull structures.

Upper brackets webs				
Upper brackets flanges				
Lower brackets webs				
Lower brackets flanges				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Upper stool plating				
Upper stool stiffeners				
Lower stool plating				
Lower stool stiffeners				
Transverse web frames in top side tanks				
Plating				
Flanges				
Stiffeners				
Transverse web frames in hopper tanks				
Plating				
Flanges				
Stiffeners				
Hatch covers				
Plating				
Stiffeners				
Hatch coamings				
Plating				
Stiffeners				

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 5 Template of Survey Programme for Oil Tankers

(Note: This annex selects the template of the survey programme of Intermediate Survey No. 3 in the scope of Special Survey No.4 of a 300,000 DWT non-CSR double hull VLCC built in 2002 for reference. Considering that there are almost no single hull oil tankers in ISC fleet, the guidelines do not list the template of ESP survey programme for single hull oil tankers.)

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INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR TANKERS

Basic information and particulars

Ship's name:	CO**********KE
Kind of Survey:	☐ No._____Special Survey ☒ Intermediate Survey in scope of No.__3__Special Survey
IMO number:	92***15
Flag State:	Panama
Port of registry:	Panama
Gross tonnage:	159730
Deadweight (metric tonnes):	298833.00
Length between perpendiculars(m):	320.00
Shipbuilder:	Na********** Ship Engineering Co.,Ltd.
Hull number:	N***1
Recognized organization (RO):	International Ship Classification
Class No.:	02T***6
Class Character and Notations of Hull:	★ CSA Oil Tanker, Double Hull; F.P.≤60℃; COMPASS (D); Loading Computer (S, I); ESP; In Water Survey
Date of build of the ship:	December 20, 2002
Owner:	Co**********time Inc.
Thickness measurement firm:	Da********** Services Co., Ltd.

Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : ☒ *Applicable* ☐ *Not applicable* *Form ESP-T Ver.4.0 202009*

CONTENT

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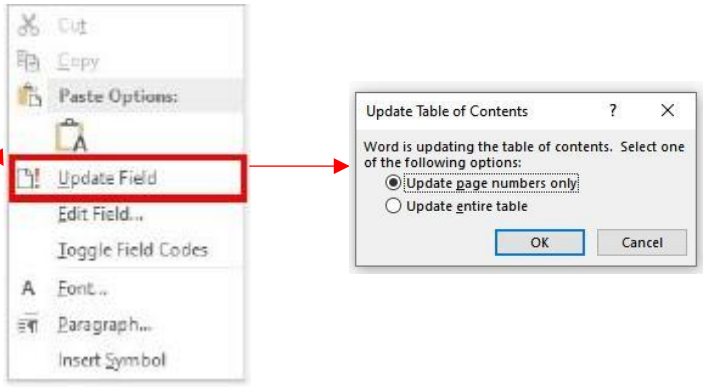
Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo area, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

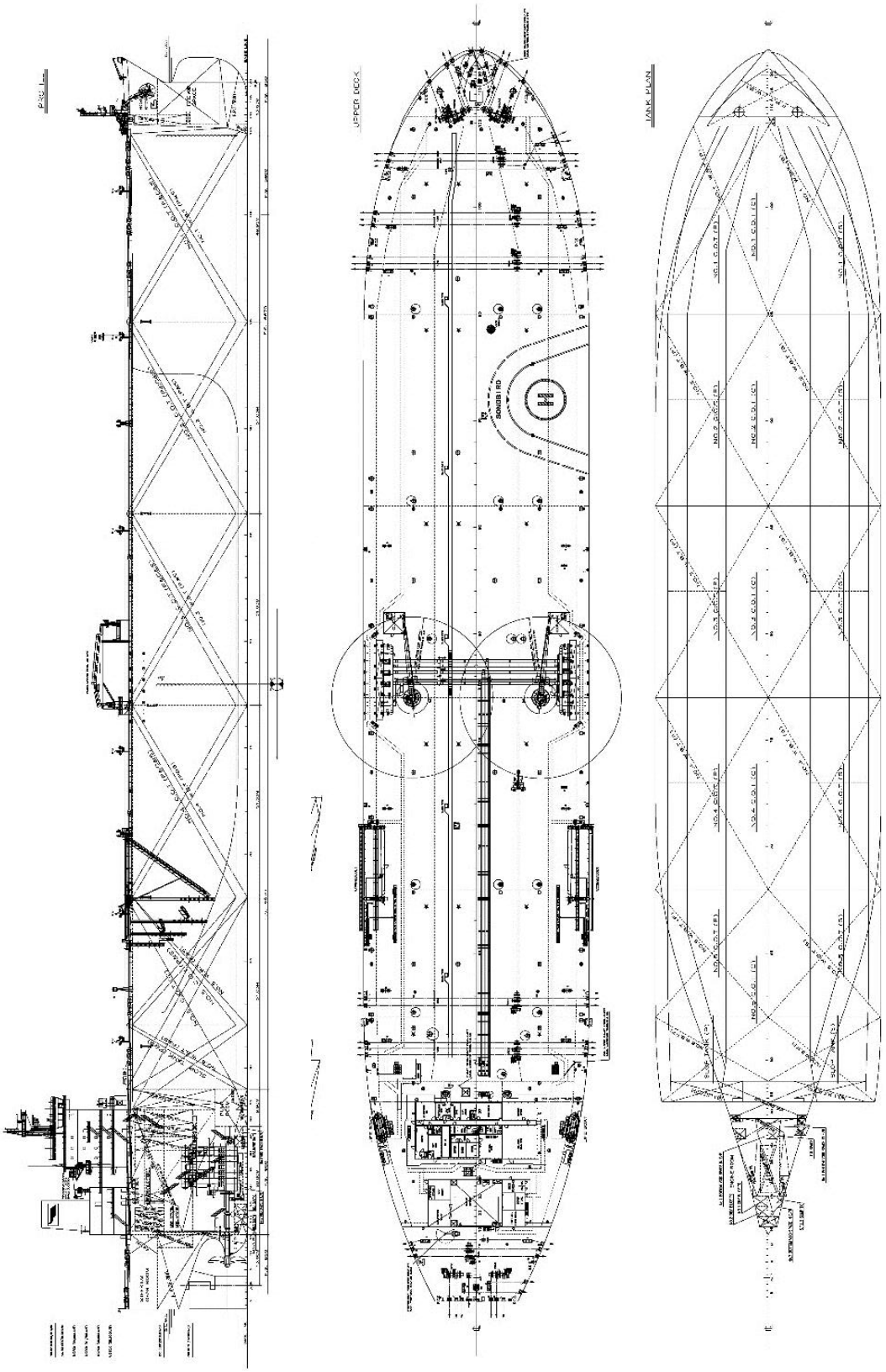
1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)②, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.



3. List of tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme shall indicate any changes relating to (and shall update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the survey planning questionnaire.

Tank No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC
Nos.5 Wing & D.B.W.B.T.(P)	X			X					X		X		
Nos.5 Wing & D.B.W.B.T.(S)	X			X					X		X		

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

This article only needs to be filled in when the questionnaire is changed or updated. Take the above Nos.5 Wing & D.B.W.B.T.(P/S) as an example, the coating condition was Fair at the time of the last survey, so it was marked here.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Tanks and spaces are shall safe for access. Tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access is to be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating is to be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

This article only needs to be filled in when the questionnaire is changed or updated. Here the ship company decided to use the raft in the cargo oil tank for inspection and updated the information.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Wing Tanks	Underdeck	C			X			
	Side shell	C			X			
	Bottom transverse							
	Longitudinal	C			X			
	Transverse	C			X			
Centre Tanks	Underdeck							
	Bottom transverse							
	Transverse							

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way. 5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Boats or rafts;

(e) Portable ladders; and/or

(f) Other equivalent means.

5.3 Surveys of tanks by means of boats or rafts shall only be undertaken with the agreement of the surveyor, who shall take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.4 When rafts or boats will be used for close-up survey the following conditions shall be observed:

(1) Only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, shall be used;

(2) The boat or raft shall be tethered to the access ladder and an additional person shall be stationed down the access ladder with a clear view of the boat or raft;

(3) Appropriate lifejackets shall be available for all participants;

(4) The surface of water in the tank shall be calm (under all foreseeable conditions the expected rise of water within the tank shall not exceed 0.25 m) and the water level either stationary or falling. On no account shall the level of the water be rising while the boat or raft is in use;

(5) The tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

(6) At no time shall the water level be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses shall only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered;

(7) If the tanks (or spaces) are connected by a common venting system, or Inert Gas system, the tank in which the boat or raft is to be used is to be isolated to prevent a transfer of gas from other tanks (or spaces).

5.5 Rafts or boats alone may be allowed for inspection of the under deck areas for tanks or spaces if the depth of the webs is 1.5 m or less.

5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone shall be allowed only:

(1) When the coating of the under deck structure is in GOOD condition and there is no evidence of wastage; or

(2) If a permanent means of access is provided in each bay to allow safe entry and exit. This means :

i. Access shall be direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or.

ii. Access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level shall be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank.

If neither of the above conditions are met, then staging or other equivalent means shall be provided for the survey of the under deck areas.

5.7 The use of rafts or boats alone in 5.5 and 5.6 does not preclude the use of boats or rafts to move about within a tank during a survey

6. List of equipment for survey

The equipment that will be made available for carrying out the survey and the required thickness measurements identify and list below:

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of

the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Tanks:

No.1-5 C.O.T(P&S&C), Slop T.(P&S)

(2) Ballast Tanks:

Nos.1-5 Wing & D.B.W.B.T.(P&S)

(3) Fuel Oil Tanks:

(4) Lube Oil Tanks:

(5) Fresh Water Tanks:

(6) Other Tanks/ Spaces:

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo oil tanks/liquid cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces adjacent to cargo oil tanks/liquid cargo tanks and all ballast within the cargo area.

Considering that there is generally no fuel oil tank, lube oil tank or fresh water tank in the cargo area, items (3), (4) and (5) may not be filled in here.

The following are to be filled in except (1) to (5) but not limited to: pump-rooms, pipe tunnels, cofferdams, void spaces and LNG ready spaces in VLCC.

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

7.2 Close-up survey

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A) All web frames, in all ballast tanks.
B) All web frames, including deck transverse and cross ties, in a cargo oil tank.
C) One web frame, including deck transverse and cross ties, in each remaining cargo oil tank.
D) All transverse bulkheads, in all cargo oil and ballast tanks.

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Cargo Tanks	
Ballast Tanks:	
Fuel Oil Tanks:	
Lubrication Oil Tanks:	
Fresh Water Tanks:	
Others:	

Pressure tests on cargo oil tanks/liquid cargo tanks/ballast tanks may not normally be required for intermediate survey of ships over 10 years of age in the scope of the previous special survey unless deemed necessary by the surveyor. Leave the form blank here.

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of cargo tanks are to be tested the highest point that liquid will rise under service conditions.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.
(6) Cargo tank testing carried out by the vessel's crew under the direction of the Master may be accepted by the surveyor provided the following conditions are complied with:
a) A tank testing procedure has been submitted by the owner and reviewed by the Society prior to the testing being carried out;
b) There is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;
c) The tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;
d) The satisfactory results of the testing is recorded in the vessel's logbook.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1) Within the cargo area:
A) Each deck plate;
B) Two transverse sections;
C) All wind and water strakes.
2) Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:
A) All web frames, in all ballast tanks.
B) All web frames, including deck transverse and cross ties, in a cargo oil tank.
C) One web frame, including deck transverse and cross ties, in each remaining cargo oil tank.
D) All transverse bulkheads, in all cargo oil and ballast tanks.3) Selected wind and water strakes outside the cargo area.
4) Internals in forepeak and afterpeak ballast tanks.

10. Minimum thickness of hull structures

Note that the selection here is to correspond to Appendix 3 below.

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☒ For non-CSR Tankers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Tankers, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

Name of firm: Da********* Services Co., Ltd.

Address: Rm.1**********an,China

If there is any change in thickness measurement firm before survey, please fill in the latest information here.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
Please refer to the Form RA (No.ZG18SS1****)				Permanent Repair	April 2, 2018

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No damages reported to ISC					

If unavailable, fill in "No damages reported to ISC"

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

List of Critical Areas for Tanks	
Cargo tanks	connections of primary structures, such as inner bottom, long. bulkhead, vertical web, cross ties, stringers, web frames, deck transvers, particularly end bracket toes
Cargo tanks	boundaries of corrugations and bulkhead stools particularly in way of shelf plates, deck, inner bottom, etc
Cargo tanks/ Hopper tanks	knuckle connection between inner bottom plating and bilge hopper sloping plating, particularly connected hopper tank web frames, double bottom side girders and floors
Cargo tanks/ Hopper tanks	knuckle connection of bilge hopper sloping plating to inner hull longitudinal bulkhead, particularly connected web plating and horizontal girders
Wing tanks/ Hopper tanks/ Double-bottom tanks	connections of longitudinals to transverse web frames, floors and transverse bulkheads
Main deck	ends of deck transverse, if deck structures fitted on top of deck

The illustrative oil tanker in the annex was completed in 2002 without PMA/CMP. No description is added here.

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS), clad steel and stainless steel to be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ☒

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.* ☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: October 15, 2020 (.....)

(name and signature of authorized owner's representative)

Date: October 19, 2020 (… .....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for tank transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR TANKERS
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	CO*********KE
IMO number:	92***15
Flag State:	Panama
Port of registry:	Panama
Owner:	Co*****************time Inc.
Recognized organization:	International Ship Classification
Gross tonnage:	159730
Deadweight (metric tonnes):	298833.00
Date of build:	December 20, 2002

Input basic information and parameters.

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

2. Information on access provision for close-up surveys and thickness measurement

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak	B		X		X	X	
A.P.	Aft Peak	B		X		X	X	
Wing Tanks	Underdeck	B				X	X	
	Side shell	B				X	X	

	Bottom transverse	B					X	
	Longitudinal	B					X	
	Transverse	B				X	X	
Wing Tanks	Underdeck	C		X				
	Side shell	C		X				
	Bottom transverse							
	Longitudinal	C		X				
	Transverse	C		X				
Centre Tanks	Underdeck	C		X				
	Bottom transverse							
	Transverse	C		X				

Note: To be filled with "X" in all columns except for "Other means (please specify)" as applicable.

The wing tanks with both cargo oil tanks (C) and ballast tanks (B) are to be listed separately.

For structures that do not apply (do not exist), leave the cell blank.

Details of the inert gas plant and tank cleaning procedures:

Details of the inert gas plant and tank cleaning procedures:

(a) Inert Gas System installed: **Yes** ☒ **No** ☐

-Details of inert gas plant: INERT GAS PRODUCTED BY AUX. BOILER

-Indicate average oxygen content during inerting: less than 5%

(b) Cargo Tank Cleaning Procedures:

i. Indicate the frequency of the tank washing, especially uncoated tanks:

- After cargo discharging: All cargo tanks including slop tanks washed about 1-2 times

-Before dry docking: Clean all cargo & slop tanks by water washing subject to cargo effects

ii. Washing medium used:

-Crude Oil: **Yes** ☒ **No** ☐

-Heated seawater: **Yes** ☒ **No** ☐

-Other medium (specify): Nil.

For oil tankers: *History of cargo with H_2S content or heated cargo for the last 3 years together with indication as to whether cargo was heated and where available, Marine Safety Data Sheets (MSDS)*:*

~~**For chemical tankers:** *History of heated cargo for the last 3 years together with indication as to whether cargo was heated.*~~

The vessel engaged in carrying crude oil for the last 3 years and nearly 3~4 voyages each year.

For oil tankers, history of cargo with H_2S content or heated cargo for the last 3 months together with indication as to whether cargo was heated and, where available, Marine Safety Data Sheets (MSDS).

* Refer to resolution MSC.150(77) on Recommendation for material safety data sheets for MARPOL Annex I cargoes and marine fuel oils.

3. Owner's inspection

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of

the results of their inspections, for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Tank Damage History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo centre tanks																	
No.1 C.O.T(C)					X									N			
No.2 C.O.T(C)					X									N			
No.3 C.O.T(C)					X									N			
No.4 C.O.T(C)					X									N			
No.5 C.O.T(C)					X									N			
Cargo wing tanks																	
No.1 C.O.T(P)					X									N			
No.1 C.O.T(S)					X									N			
No.2 C.O.T(P)					X									N			
No.2 C.O.T(S)					X									N			
No.3 C.O.T(P)					X									N			
No.3 C.O.T(S)					X									N			
No.4 C.O.T(P)					X									N			
No.4 C.O.T(S)					X									N			
No.5 C.O.T(P)					X									N			
No.5 C.O.T(S)					X									N			
Slop																	
Slop T.(P)	X								X	X				N			
Slop T.(S)	X								X	X				N			
Ballast tanks																	
Nos.1 Wing & D.B.W.B.T.(P)	X			X					X	X				N			
Nos.1 Wing & D.B.W.B.T.(S)	X			X					X	X				N			
Nos.2 Wing & D.B.W.B.T.(P)	X			X					X	X				N			
Nos.2 Wing & D.B.W.B.T.(S)	X			X					X	X				N			
Nos.3 Wing & D.B.W.B.T.(P)	X			X					X	X				N			
Nos.3 Wing & D.B..B.T.(S)	X			X					X	X				N			
Nos.4 Wing & D.B.W.B.T.(P)	X			X					X	X				N			
Nos.4 Wing & D.B.W.B.T.(S)	X			X					X	X				N	X		
Nos.5 Wing & D.B.W.B.T.(P)	X			X					X	X				N			
Nos.5 Wing & D.B.W.B.T.(S)	X			X					X	X				N			

The tank is marked here with a history of damage and repair, which is consistent with 12 of the survey programme above.

Aft peak tank	X			X					X	X				N			
Fore peak tank	X			X					X	X				N			
Miscellaneous spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature: .....

Date: **August 20, 2020**

4. Reports of Port State Control inspections

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.

When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures.
Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:

Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification

	If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.	

6. Name and address of the approved thickness measurement firm

Name of firm: Zh**********d Engineering Co.,Ltd.

Address: **********wei, **********pu District, Guangzhou

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

This Appendix does not apply to the ships constructed in accordance with PART NINE of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	Minimum renewal thickness	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**

2 For tanks constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Ship side				
Plating				
Longitudinals				
Longitudinal girders				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Transverse web frames, floors and stringers				
Plating				
Flanges				
Stiffeners				
Cross ties				
Flanges				
Webs				

If applicable, and (b) is selected in item 10 of the preceding text, the form is to be filled in item by item according to the corrosion criteria given by the classification society for various hull structures.

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 6 Template of Survey Programme for CSR Oil Tankers

(Note: This annex selects the template of the survey programme of Special Survey No.1 of an 110,000 DWT CSR oil tanker built in 2014 for reference.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR TANKERS

Basic information and particulars

Ship's name:	TO********AN
Kind of Survey:	☒ No.__1__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	96***14
Flag State:	China
Port of registry:	Shanghai
Gross tonnage:	60166
Deadweight (metric tonnes):	109615.10
Length between perpendiculars(m):	234.00
Shipbuilder:	China **********Co.,Ltd.
Hull number:	C******01
Recognized organization (RO):	International Ship Classification
Class No.:	14B***4
Class Character and Notations of Hull:	★ CSA Oil Tanker, Double Hull;F.P. ≤ 60℃; CSR; Ice Class B; COMPASS (D,R,F); PSPC(B); Loading Computer (S, I, D); ESP
Date of build of the ship:	May 23, 2014
Owner:	CO********** Transportation Co.,Ltd.
Thickness measurement firm:	Zh********** Engineering Co.,Ltd.

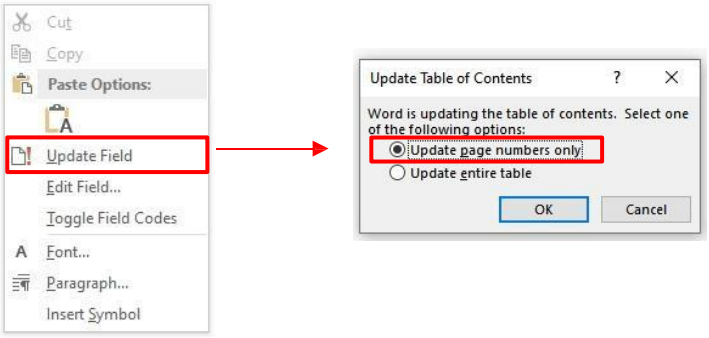
Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : ☒ *Applicable* □ *Not applicable* *Form ESP-T Ver.4.0 202009*

CONTENT

Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo area, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

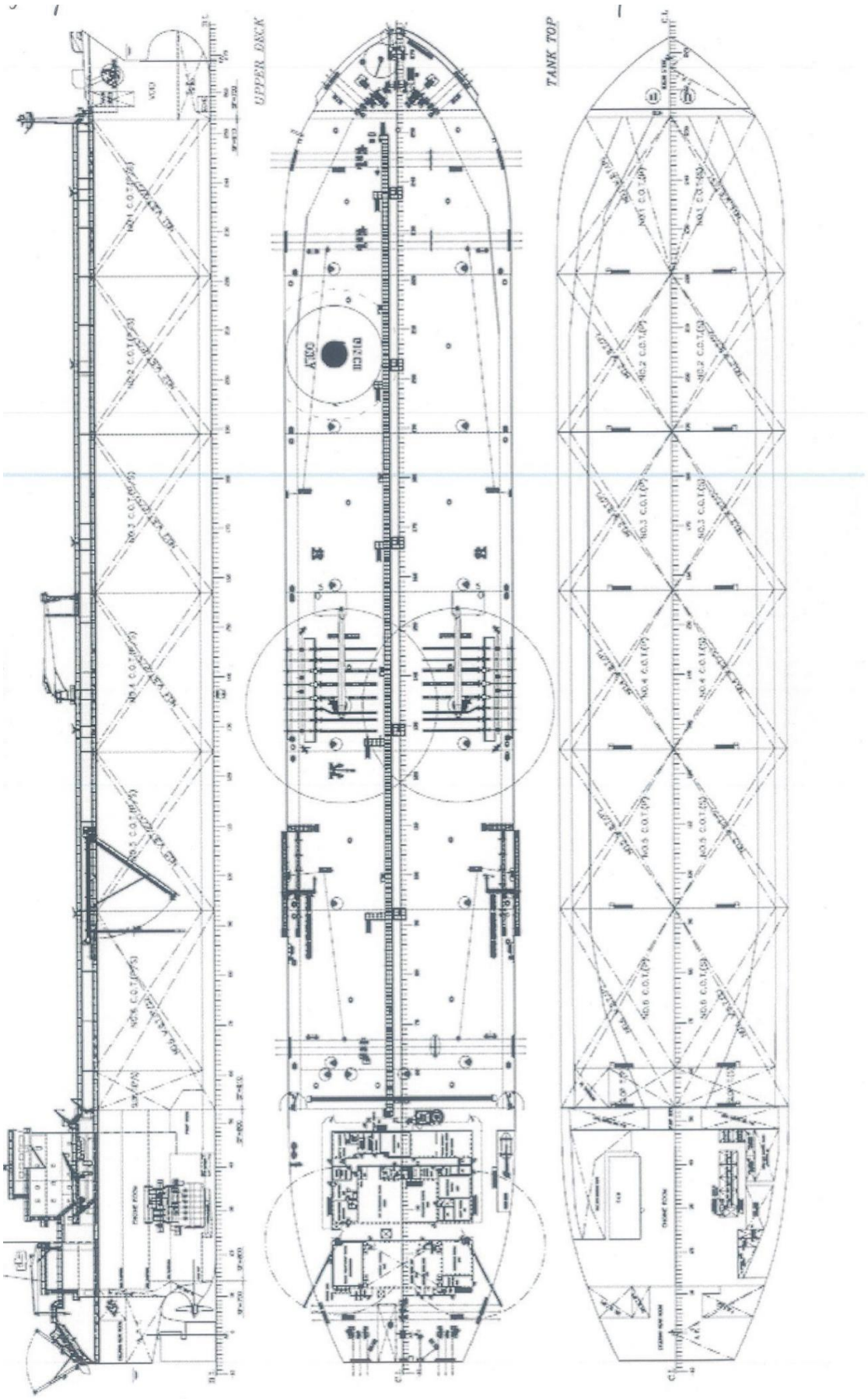
1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)②, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.


UPPER DECK
TANK TOP

3. List of tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme shall indicate any changes relating to (and shall update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the survey planning questionnaire.

Tank No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Tanks and spaces are shall safe for access. Tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access is to be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating is to be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Wing Tanks	Underdeck							
	Side shell							
	Bottom transverse							
	Longitudinal							
	Transverse							
Centre Tanks	Underdeck							
	Bottom transverse							
	Transverse							

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Note: To be filled with "X" in all columns except for "Other means (please specify)" as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Boats or rafts;

(e) Portable ladders; and/or

(f) Other equivalent means.

5.3 Surveys of tanks by means of boats or rafts shall only be undertaken with the agreement of the surveyor, who shall take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.4 When rafts or boats will be used for close-up survey the following conditions shall be observed:

(1) Only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, shall be used;

(2) The boat or raft shall be tethered to the access ladder and an additional person shall be stationed down the access ladder with a clear view of the boat or raft;

(3) Appropriate lifejackets shall be available for all participants;

(4) The surface of water in the tank shall be calm (under all foreseeable conditions the expected rise of water within the tank shall not exceed 0.25 m) and the water level either stationary or falling. On no account shall the level of the water be rising while the boat or raft is in use;

(5) The tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

(6) At no time shall the water level be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses shall only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered;

(7) If the tanks (or spaces) are connected by a common venting system, or Inert Gas system, the tank in which the boat or raft is to be used is to be isolated to prevent a transfer of gas from other tanks (or spaces).

5.5 Rafts or boats alone may be allowed for inspection of the under deck areas for tanks or spaces if the depth of the webs is 1.5 m or less.

5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone shall be allowed only:

(1) When the coating of the under deck structure is in GOOD condition and there is no evidence of wastage; or

(2) If a permanent means of access is provided in each bay to allow safe entry and exit. This means :

i. Access shall be direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or.

ii. Access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level shall be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank.

If neither of the above conditions are met, then staging or other equivalent means shall be provided for the survey of the under deck areas.

5.7 The use of rafts or boats alone in 5.5 and 5.6 does not preclude the use of boats or rafts to move about within a tank during a survey

6. List of equipment for survey

The equipment that will be made available for carrying out the survey and the required thickness measurements identify and list below:

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo oil tanks/liquid cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces adjacent to cargo oil tanks/liquid cargo tanks and all ballast within the cargo area.

(1) Cargo Tanks:

No.1-6 C.O.T.(P&S), SLOP TK(P&S)

(2) Ballast Tanks:

No.1-6 W.B.Tank(P&S)

(3) Fuel Oil Tanks:

Considering that there is generally no fuel oil tank, lube oil tank or fresh water tank in the cargo area, items (3), (4) and (5) may not be filled in here.

(4) Lube Oil Tanks:

(5) Fresh Water Tanks:

The following are to be filled in except (1) to (5) but not limited to: pump-rooms, pipe tunnels, cofferdams, void spaces and LNG ready spaces in VLCC.

(6) Other Tanks/ Spaces:

PUMP ROOM, SIDE COFF. TK (P&S), PRCOFF, VOID TK (P&S)

7.2 Close-up survey

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey

for this ship in accordance with ISC Rules and 2011 ESP Code.

A) One web frame, in a ballast tank.
B) One deck transverse, in a cargo oil tank.
C) One transverse bulkhead, in a complete ballast tank.
D) One transverse bulkhead, in a cargo oil wing tank.

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Cargo Tanks	No.1 C.O.T.(P&S), SLOP TK(P&S)
Ballast Tanks:	Forepeak Tank, Aft Peak Tank, No.1-6 W.B.Tank(P&S)
Fuel Oil Tanks:	
Lubrication Oil Tanks:	
Fresh Water Tanks:	
Others:	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of cargo tanks are to be tested the highest point that liquid will rise under service conditions.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.
(6) Cargo tank testing carried out by the vessel's crew under the direction of the Master may be accepted by the surveyor provided the following conditions are complied with:
a) A tank testing procedure has been submitted by the owner and reviewed by the Society prior to the testing being carried out;
b) There is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;
c) The tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;
d) The satisfactory results of the testing is recorded in the vessel's logbook.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1) One section of deck plating for the full beam of the ship within the cargo area.
2) Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey:
A) One web frame, in a ballast tank.
B) One deck transverse, in a cargo oil tank.
C) One transverse bulkhead, in a complete ballast tank.
D) One transverse bulkhead, in a cargo oil wing tank.

10. Minimum thickness of hull structures

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☐ For non-CSR Tankers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Tankers, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

Note that the selection here is to correspond to Appendix 3 below. For CSR ships, leave it blank here.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

No damages reported to ISC					

If unavailable, fill in "No damages reported to ISC"

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

Please refer to the Structure Access Manual (Dwg. No.**********)

This is not to be left blank and can be referred to the approved Structure Access Manual.

List of Critical Areas for Tanks	
Cargo tanks	connections of primary structures, such as inner bottom, long. bulkhead, vertical web, cross ties, stringers, web frames, deck transvers, particularly end bracket toes
Cargo tanks	boundaries of corrugations and bulkhead stools particularly in way of shelf plates, deck, inner bottom, etc
Cargo tanks/ Hopper tanks	knuckle connection between inner bottom plating and bilge hopper sloping plating，particularly connected hopper tank web frames, double bottom side girders and floors
Cargo tanks/ Hopper tanks	knuckle connection of bilge hopper sloping plating to inner hull longitudinal bulkhead, particularly connected web plating and horizontal girders
Wing tanks/ Hopper tanks/ Double-bottom tanks	connections of longitudinals to transverse web frames, floors and transverse bulkheads
Main deck	ends of deck transverse, if deck structures fitted on top of deck

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS), clad steel and stainless steel to be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

This is to correspond to 10 of the survey programme. For CSR ships, leave it blank here.

Appendix 3 - Other documentation

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ----------☐

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.*----------☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: April 15, 2019 (.....)

(name and signature of authorized owner's representative)

Date: April 18, 2019 (… .....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for tank transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel, are to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR TANKERS
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Ship's name:	TO********AN
IMO number:	96***14
Flag State:	China
Port of registry:	Shanghai
Owner:	CO********** Transportation Co.,Ltd.
Recognized organization:	International Ship Classification
Gross tonnage:	60166
Deadweight (metric tonnes):	109615.10
Date of build:	May 23, 2014

Input basic information and parameters.

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

2. Information on access provision for close-up surveys and thickness measurement

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak	B	X	X		X		
A.P.	Aft Peak	B	X			X		
Wing Tanks	Underdeck	B	X			X		
	Side shell	B	X			X		

	Bottom transverse	B	X					
	Longitudinal	B	X					
	Transverse	B	X			X		
Wing Tanks	Underdeck	C	X	X				
	Side shell	C		X				
	Bottom transverse							
	Longitudinal	C		X				
	Transverse	C	X	X				
Centre Tanks	Underdeck							
	Bottom transverse							
	Transverse							

The wing tanks with both cargo oil tanks (C) and ballast tanks (B) are to be listed separately.

For structures that do not apply (do not exist), leave the cell blank.

Note: To be filled with "X" in all columns except for "Other means (please specify)" as applicable.

Details of the inert gas plant and tank cleaning procedures:

Details of the inert gas plant and tank cleaning procedures:

(a) Inert Gas System installed: **Yes** ☒ **No** ☐

-Details of inert gas plant: 1. Supplied by flue gas; Manufacturer: HAMWORTHY; Capacity: 11250 m3/h; Blower: 2x5625 m3/h; 2. Top-up IG Generator: Hamworthy Moss AS; Capacity: 500 m

-Indicate average oxygen content during inerting: 3.5%

(b) Cargo Tank Cleaning Procedures:

i. Indicate the frequency of the tank washing, especially uncoated tanks:

- After cargo discharging: Not carried out (ship load only white oil cargoes), all cargo tanks are coated with Epoxy/ Before nominated cargo change

-Before dry docking: 30 months

ii. Washing medium used:

-Crude Oil: **Yes** ☐ **No** ☒

-Heated seawater: **Yes** ☒ **No** ☐

-Other medium (specify): Nil.

For oil tankers: *History of cargo with H_2S content or heated cargo for the last 3 years together with indication as to whether cargo was heated and where available, Marine Safety Data Sheets (MSDS)*:* ~~**For chemical tankers:** *History of heated cargo for the last 3 years together with indication as to whether cargo was heated.*~~
The vessel occasionally transports oils with high H_2S content, about 1~2 times per year in recent 3 years.

For oil tankers, history of cargo with H_2S content or heated cargo for the last 3 months together with indication as to whether cargo was heated and, where available, Marine Safety Data Sheets (MSDS).

* Refer to resolution MSC.150(77) on Recommendation for material safety data sheets for MARPOL Annex I cargoes and marine fuel oils.

3. Owner's inspection

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Tank Damage History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo centre tanks																	
Cargo wing tanks																	
No.1 C.O.T.(P)	**HC-N**								X	X				N			
No.1 C.O.T.(S)	**HC-N**								X	X				N			
No.2 C.O.T.(P)	**HC-N**								X	X				N			
No.2 C.O.T.(S)	**HC-N**								X	X				N			
No.3 C.O.T.(P)	**HC-N**								X	X				N			
No.3 C.O.T.(S)	**HC-N**								X	X				N			
No.4 C.O.T.(P)	**HC-N**								X	X				N			
No.4 C.O.T.(S)	**HC-N**								X	X				N			
No.5 C.O.T.(P)	**HC-N**								X	X				N			
No.5 C.O.T.(S)	**HC-N**								X	X				N			
No.6 C.O.T.(P)	**HC-N**								X	X				N			
No.6 C.O.T.(S)	**HC-N**								X	X				N			
Slop																	
SLOP TK(P)	X								X	X				N			
SLOP TK(S)	X								X	X				N			
Ballast tanks																	
NO.1 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.1 W.B.TANK(S)	**HC-B**			X					X	X				N			
NO.2 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.2 W.B.TANK(S)	**HC-B**			X					X	X				N			
NO.3 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.3 W.B.TANK(S)	**HC-B**			X					X	X				N			
NO.4 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.4 W.B.TANK(S)	**HC-B**			X					X	X				N			
NO.5 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.5 W.B.TANK(S)	**HC-B**			X					X	X				N			
NO.6 W.B.TANK(P)	**HC-B**			X					X	X				N			
NO.6 W.B.TANK(S)	**HC-B**			X					X	X				N			

Aft peak tank	**HC-B**			X					X	X				N			
Fore peak tank	**HC-B**			X					X	X				N			
Miscellaneous spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it. The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature: .....

Date: **February 20, 2019**

4. Reports of Port State Control inspections

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.

When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures.
Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:

Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification

If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.

6. Name and address of the approved thickness measurement firm

Name of firm: Zh********** Engineering Co.,Ltd.

Address: In the********** District, Guangzhou

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

——N/A

This Appendix does not apply to the ships constructed in accordance with PART NINE of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

Note that the selection here is to correspond to item 10 and the general Appendix above. This corrosion criterion does not apply to CSR ships, where "N/A" is to be marked at the appropriate location.

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	Minimum renewal thickness	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**

2 For tanks constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

——N/A

Note that the selection here is to correspond to item 10 and the general Appendix above. This corrosion criterion does not apply to CSR ships, where "N/A" is to be marked at the appropriate location.

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Ship side				
Plating				
Longitudinals				
Longitudinal girders				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Transverse web frames, floors and stringers				
Plating				
Flanges				
Stiffeners				
Cross ties				
Flanges				
Webs				

Remarks: The wastage allowance tables shall be attached to the survey programme.

Annex 7 Template of Survey Programme for Chemical Tankers

(Note: This annex selects the template of the survey programme of Special Survey No.2 of a 2 type chemical tanker built in 2010 for reference. Considering that there are almost no single hull chemical tankers in ISC fleet, the guidelines do not list the template of ESP survey programme for single hull chemical tankers.)

艾 氏 船 级 社

INTERNATIONAL SHIP CLASSIFICATION

ENHANCED SURVEY PROGRAMME
FOR TANKERS

Basic information and particulars

Ship's name:	NI*******2
Kind of Survey:	☒ No.__2__Special Survey ☐ Intermediate Survey in scope of No._____Special Survey
IMO number:	94***20
Flag State:	China
Port of registry:	Nanjing
Gross tonnage:	4359
Deadweight (metric tonnes):	6552.71
Length between perpendiculars(m):	99.00
Shipbuilder:	Ch********** Shipbuilding Industry Co., Ltd.
Hull number:	H***12
Recognized organization (RO):	International Ship Classification
Class No.:	10Y***3
Class Character and Notations of Hull:	★ CSA Chemical Tanker; Type 2; Loading Computer (S, I, D); ESP; BWMP(MEPC.127(53))
Date of build of the ship:	November 8, 2010
Owner:	Na********** Transport and Trade Co., Ltd.
Thickness measurement firm:	He********** Technology Service Co.,Ltd.

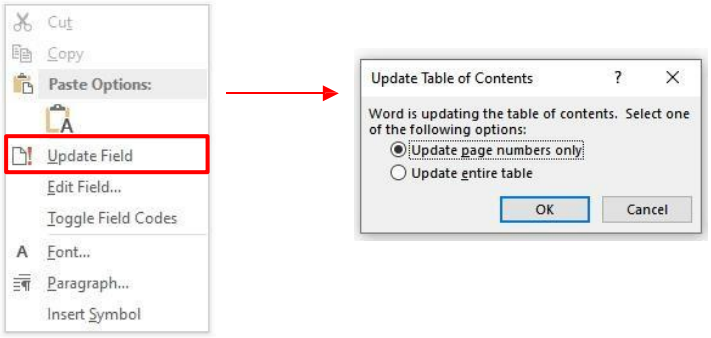
Only fill in class character and notations of hull.

If the thickness measuring firm is uncertain, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Symbols : ☒ *Applicable* □ *Not applicable* *Form ESP-T Ver.4.0 202009*

CONTENT

Right click "Update domain" on the contents after the final completion, and select "Update page number only" in the pop-up dialog box to ensure that the number of pages of the final ESP survey programme is consistent with the contents.



Before starting to edit the text, fill the ship's name and the ship's registration No. in the header.

1. Preamble

1.1 Scope

1.1.1 The present survey programme covers the minimum extent of overall surveys, close-up surveys, thickness measurements and pressure testing within the cargo area, ballast tanks including fore and aft peak tanks, required by ISC Rules and 2011 ESP Code.

1.1.2 The arrangements and safety aspects of the survey shall be acceptable to the attending surveyor(s).

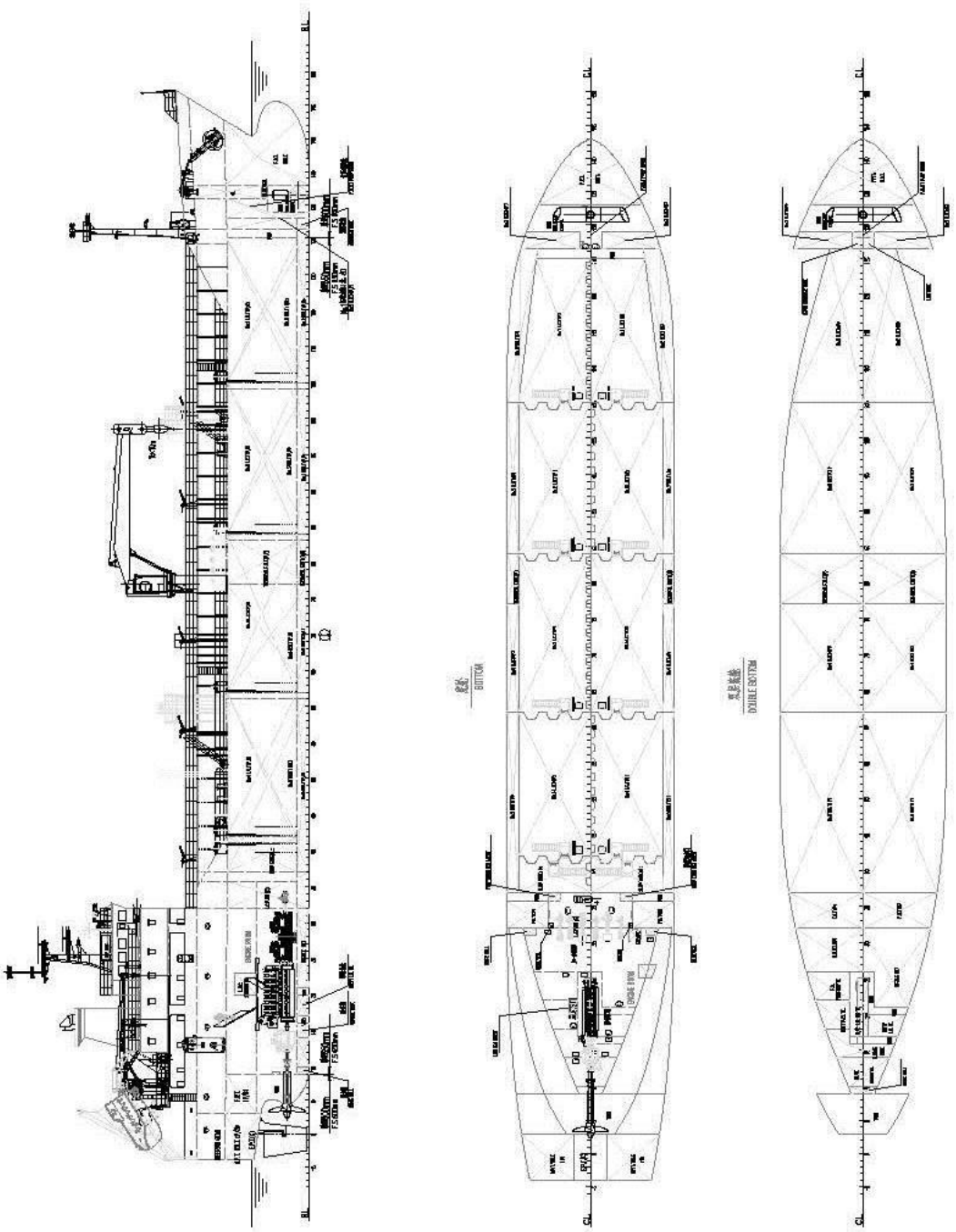
1.2 Documentation

All documents used in the development of the survey programme shall be available onboard during the survey as required by 5.1.6.5(2)②, Section 1, Chapter 5, PART ONE of ISC Rules.

2. Arrangement of tanks and spaces

This section of the survey programme shall provide information (either in the form of plans or text) on the arrangement of tanks and spaces that fall within the scope of the survey.

It is recommended to insert the general arrangement plan or capacity plan here.



3. List of tanks and spaces with information on their use, extent of coatings and corrosion prevention system

This section of the survey programme shall indicate any changes relating to (and shall update) the information on the use of the tanks of the ship, the extent of coatings and the corrosion protective system provided in the survey planning questionnaire.

Tank No.	Corrosion Protection ①					Coating Extent ②				Coating Condition ③			
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection

② U=Upper part M=Middle part L=Lower part C=Complete

③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For all columns except the sub-column mark with "HC", "X" is to be filled in as applicable;
(3) For the definition of the coating condition, refer to ISC Rule.

4. Conditions for survey

4.1 The owner shall provide the necessary facilities for a safe execution of the survey.

4.1.1 In order to enable the attending surveyors to carry out the survey, provisions for proper and safe access shall be agreed between the owner and International Ship Classification, based on IMO Resolution A.1050(27) -- Revised recommendations for entering enclosed spaces aboard ships.

4.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved shall not proceed.

4.2 Tanks and spaces are shall safe for access. Tanks and spaces shall be gas free and properly ventilated. Prior to entering a tank, void or enclosed space, it shall be verified that the atmosphere in that space is free from hazardous gas and contains sufficient oxygen.

4.3 In preparation for survey and thickness measurements and to allow for a thorough examination, all spaces shall be cleaned including removal from surfaces of all loose accumulated corrosion scale. Spaces shall be sufficiently clean and free from water, scale, dirt, oil residues etc. to reveal corrosion, deformation, fractures, damages, or other structural deterioration as well as the condition of the coating. However, those areas of structure whose renewal has already been decided by the owner need only be cleaned and descaled to the extent necessary to determine the limits of the areas to be renewed.

4.4 Sufficient illumination shall be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

4.5 Where soft or semi-hard coatings have been applied, safe access is to be provided for the surveyor to verify the effectiveness of the coating and to carry out an assessment of the conditions of internal structures which may include spot removal of the coating. When safe access cannot be provided, the soft or semi-hard coating is to be removed.

4.6 The surveyor(s) shall always be accompanied by at least one responsible person, assigned by the owner, experienced in tank and enclosed space inspection.

5. Provisions and method of access to structures

This section of the survey programme shall indicate any changes relating to (and update) the information on the provisions and methods of access to structures provided in the survey planning questionnaire.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak							
A.P.	Aft Peak							
Wing Tanks	Underdeck							
	Side shell							
	Bottom transverse							
	Longitudinal							
	Transverse							
Centre Tanks	Underdeck							
	Bottom transverse							
	Transverse							

This article only needs to be completed when the questionnaire is changed or updated. Otherwise, please leave the form blank.

Note: To be filled with "X" in all columns except for “Other means (please specify)” as applicable.

5.1 For overall surveys, means shall be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2 For close-up surveys, one or more of the following means for access, acceptable to the Surveyor, shall be provided:

(a) Permanent staging and passages through structures;

(b) Temporary staging and passages through structures;

(c) Hydraulic arm vehicles such as conventional cherry pickers, lifts and moveable platforms;

(d) Boats or rafts;

(e) Portable ladders; and/or

(f) Other equivalent means.

5.3 Surveys of tanks by means of boats or rafts shall only be undertaken with the agreement of the surveyor, who shall take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions and provided the expected rise of water within the tank does not exceed 0.25 m.

5.4 When rafts or boats will be used for close-up survey the following conditions shall be observed:

(1) Only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, shall be used;

(2) The boat or raft shall be tethered to the access ladder and an additional person shall be stationed down the access ladder with a clear view of the boat or raft;

(3) Appropriate lifejackets shall be available for all participants;

(4) The surface of water in the tank shall be calm (under all foreseeable conditions the expected rise of water within the tank shall not exceed 0.25 m) and the water level either stationary or falling. On no account shall the level of the water be rising while the boat or raft is in use;

(5) The tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

(6) At no time shall the water level be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses shall only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times. Other effective means of escape to the deck may be considered;

(7) If the tanks (or spaces) are connected by a common venting system, or Inert Gas system, the tank in which the boat or raft is to be used is to be isolated to prevent a transfer of gas from other tanks (or spaces).

5.5 Rafts or boats alone may be allowed for inspection of the under deck areas for tanks or spaces if the depth of the webs is 1.5 m or less.

5.6 If the depth of the webs is more than 1.5 m, rafts or boats alone shall be allowed only:

(1) When the coating of the under deck structure is in GOOD condition and there is no evidence of wastage; or

(2) If a permanent means of access is provided in each bay to allow safe entry and exit. This means :

i. Access shall be direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or.

ii. Access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level shall be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank.

If neither of the above conditions are met, then staging or other equivalent means shall be provided for the survey of the under deck areas.

5.7 The use of rafts or boats alone in 5.5 and 5.6 does not preclude the use of boats or rafts to move about within a tank during a survey

6. List of equipment for survey

The equipment that will be made available for carrying out the survey and the required thickness measurements identify and list below:

(1) Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the surveyor as required.

(2) One or more of the following fracture detection procedures may be required if deemed necessary by the Surveyor:

- Radiographic equipment
- Ultrasonic equipment
- Magnetic particle equipment
- Dye penetrant

(3) Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use shall be made available during the survey. A safety checklist shall be provided.

(4) Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

(5) Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc.) during the survey.

7. Survey requirements

7.1 Overall survey

This section of the survey programme shall identify and list the spaces that shall undergo an overall survey for this ship in accordance with ISC Rules and 2011 ESP Code.

(1) Cargo Tanks:

No.1-6 Cargo Tank(P&S), Slop Tank(P&S)

(2) Ballast Tanks:

No.1-6 BWT/P&S, SPACE T/C, F.P.T., A.P.T.

(3) Fuel Oil Tanks:

(4) Lube Oil Tanks:

An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

An overall survey of all tanks and spaces is to be carried out at each special survey or intermediate survey in the scope of a special survey, including cargo oil tanks/liquid cargo tanks, pump-rooms, cofferdams, pipe tunnels, void spaces adjacent to cargo oil tanks/liquid cargo tanks and all ballast

Considering that there is generally no fuel oil tank, lube oil tank or fresh water tank in the cargo area, items (3), (4) and (5) may not be filled in here.

(5) Fresh Water Tanks:

The following are to be filled in except (1) to (5) but not limited to: pump-rooms, pipe tunnels, cofferdams, void spaces and LNG ready spaces in VLCC.

(6) Other Tanks/ Spaces:

PUMP ROOM, COFFERDAM, VOID SPACE

A close-up survey is a survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.

7.2 Close-up survey

This section of the survey programme shall identify and list the hull structures that shall undergo a close-up survey for this ship in accordance with ISC Rules and 2011 ESP Code.

A) All web frame rings in a ballast wing tank or ballast double hull tank.
B) The knuckle area and the upper part (3 metres approx.) of one web frame in each remaining ballast tank.
C) One deck transverse in two cargo tanks.
D) One transverse bulkhead in each ballast tank.
E) One transverse bulkhead in two cargo centre tanks.
F) One transverse bulkhead in a cargo wing tank.

8. Identifications of tanks for tank testing

This section of the survey programme shall identify and list the cargo holds and tanks that shall undergo tank testing for this ship in accordance with ISC Rules and 2011 ESP Code.

Cargo Tanks	No.1-6 Cargo Tank(P&S), Slop Tank(P&S)
Ballast Tanks:	No.1-6 BWT/P&S, SPACE T/C, F.P.T., A.P.T.
Fuel Oil Tanks:	
Lubrication Oil Tanks:	
Fresh Water Tanks:	
Others:	

Notes:
(1) Tank testing of fuel oil, lube oil and fresh water tanks may be specially considered based on a satisfactory external examination of the tank boundaries, and a confirmation from the Master stating that the pressure testing has been carried out according to the requirements with satisfactory results.
(2) The testing of double bottom tanks and other spaces not designed for the carriage of liquid may be omitted, provided a satisfactory internal examination together with an examination of the tank top is carried out.
(3) Boundaries of ballast tanks are to be tested with a head of liquid to the top of air pipes.
(4) Boundaries of cargo tanks are to be tested the highest point that liquid will rise under service conditions.
(5) Boundaries of fuel oil, lube oil and fresh water tanks are to be tested with a head of liquid to the highest point that liquid will rise under service conditions.
(6) Cargo tank testing carried out by the vessel's crew under the direction of the Master may be accepted by the surveyor provided the following conditions are complied with:
a) A tank testing procedure has been submitted by the owner and reviewed by the Society prior to the testing being carried out;
b) There is no record of leakage, distortion or substantial corrosion that would affect the structural integrity of the tank;
c) The tank testing has been satisfactorily carried out within special survey window not more than 3 months prior to the date of the survey on which the overall or close up survey is completed;
d) The satisfactory results of the testing is recorded in the vessel's logbook.

9. Identification of areas and sections for thickness measurements

This section of the survey programme shall identify and list the areas and sections where thickness measurements shall be taken in accordance with ISC Rules and 2011 ESP Code.

1)Within the cargo area:
A) Each deck plate；
B) One transverse sections；
2) Measurements, for general assessment and recording of corrosion pattern, of those structural members
subject to close-up survey:
A) All web frame rings in a ballast wing tank or ballast double hull tank.
B) The knuckle area and the upper part (3 metres approx.) of one web frame in each remaining ballast tank.
C) One deck transverse in two cargo tanks.
D) One transverse bulkhead in each ballast tank.
E) One transverse bulkhead in two cargo centre tanks.
F) One transverse bulkhead in a cargo wing tank.

Note that the selection here is to correspond to Appendix 3 below.

10. Minimum thickness of hull structures

This section of the survey programme shall specify the minimum thickness for hull structures of this ship that are subject to survey, (indicate either (a) or preferably (b) if such information is available):

(a) ☒ For non-CSR Tankers, determined from the Appendix 3.1 **Corrosion And Wastage Allowance of Hull Structure** and the original thickness according on the hull structure plans of the ship;

(b) ☐ For non-CSR Tankers, given in the table(s) listed in Appendix 3.2 **Minimum Thickness Table of Hull Structure**.

(c) For vessels built under IACS Common Structural Rules, the renewal thickness of the hull structure elements shall be indicated in the appropriate drawings.

11. Thickness measurements firm

This section of the survey programme shall identify changes, if any, relating to the information on the thickness measurement firm provided in the survey planning questionnaire.

12. Damage experience related to the ship

This section of the survey programme shall provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area, using the tables provided below. These damages shall be subject to survey.

Hull damages sorted by location for this ship

For some ships constructed not under the supervision of ISC, the corrosion criteria for hull structure of the previous classification society have been accepted by ISC during the initial classification survey. If the classification society directly gives the minimum thickness table of hull structure, then (b) is to be selected and filled in in Appendix 3.2. In this case, class memoranda are usually left to illustrate.

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair

This section of the survey programme is to provide details of the hull damages for at least the last three years in way of the cargo holds, ballast tanks and void spaces within the cargo length area. These damages are subject to survey.

Hull damages for sister or similar ships (if available) in the case of design related damage

Tank or space number or area	Possible cause, if known	Description of the damages	Location	Repair	Date of repair
No damages reported to ISC					

If unavailable, fill in "No damages reported to ISC"

13. Areas identified with substantial corrosion from previous surveys

This section of the survey programme shall identify and list the areas of substantial corrosion from previous surveys.

Nil.

14. Critical structural areas and suspect areas

This section of the survey programme shall identify and list the critical structural areas and the suspect areas, when such information is available.

List of Critical Areas for Tanks	
Cargo tanks	connections of primary structures, such as inner bottom, long. bulkhead, vertical web, cross ties, stringers, web frames, deck transvers, particularly end bracket toes
Cargo tanks	boundaries of corrugations and bulkhead stools particularly in way of shelf plates, deck, inner bottom, etc
Cargo tanks/ Hopper tanks	knuckle connection between inner bottom plating and bilge hopper sloping plating， particularly connected hopper tank web frames, double bottom side girders and floors
Cargo tanks/ Hopper tanks	knuckle connection of bilge hopper sloping plating to inner hull longitudinal bulkhead, particularly connected web plating and horizontal girders
Wing tanks/ Hopper tanks/ Double-bottom tanks	connections of longitudinals to transverse web frames, floors and transverse bulkheads
Main deck	ends of deck transverse, if deck structures fitted on top of deck

15. Other relevant comments and information

This section of the survey programme shall provide any other comments and information relevant to the survey.

Nil.

Other comments and information relating to the survey are to be provided here. If not, fill in Nil.

Appendices

Appendix 1 - List of Plans

ISC Rules require that main structural plans of cargo and ballast tanks (scantling drawings), including information on regarding use of high tensile steel (HTS), clad steel and stainless steel to be available. This appendix of the survey programme shall identify and list the main structural plans which form part of the survey programme.

Appendix 2 - Survey Planning Questionnaire

The Survey Planning Questionnaire, which has been submitted by the owner, shall be appended to the survey programme.

Appendix 3 - Other documentation

This is to correspond to 10 of the survey programme.

This part of the survey programme shall identify and list any other documentation that forms part of the survey programme.

.1 ***Corrosion And Wastage Allowance of Hull Structure ,*** *as referred to Paragraph 10 (a) "Minimum thickness of hull structures" is attached to this survey programme.* ----------☒

.2 ***Minimum Thickness Table of Hull Structure****, as referred to Paragraph 10 (b) "Minimum thickness of hull structures" is attached to this survey programme.* ----------☐

The present survey programme is prepared by the owner in co-operation with International Ship Classification.

Date: October 9, 2020 (.....)

(name and signature of authorized owner's representative)

Date: October 12, 2020 (… .....)

(name and signature of Surveyor to **INTERNATIONAL SHIP CLASSIFICATION**)

The owner is to complete and submit the survey programme containing the Survey Planning Questionnaire with the ISC survey unit one month prior to the commencement of the survey, and the ISC survey unit is to complete the review at least one week prior to the commencement of the survey.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it.

Appendix 1 - List of Plans

1. Main structural plans (scantlings drawings) of cargo and ballast tanks, including information regarding use of high tensile steels (HTS), clad steel and stainless steel (for CSR ships these plans are to include for each structural element both the as-built and renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for tank transverse section in all cargo holds)

No.	Description
1	Midship Section and Typical Trans. BHD
2	Construction Profile & Decks
3	Shell Expansion
4	Transverse Bulkheads
5	Stem Construction
6	Stern Construction
7	Any other plans requested by the attending Surveyor

This section has described by default the transverse midship section plan, construction profile plan, shell expansion plan, transverse bulkhead plan, bow structure plan and stern structure plan, which are to be filled in as the plan name of the real ship. For example, more drawings of the main structures of the liquid cargo tanks and ballast tanks, including information regarding use of high tensile steel. For chemical tankers, information regarding use of composite steel and stainless steel is to be listed. They are mainly the hull structure drawings used by the surveyor and thickness measurement firm in close-up surveys and thickness measurements.

2. Any other documentation that forms part of the plan

No.	Name of documentation
1	General Arrangement
2	Capacity Plan

This section has described by default the general arrangement plan and capacity plan. If there are other documents and drawings which help to strengthen the survey, they are to be listed.

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INTERNATIONAL SHIP CLASSIFICATION

SURVEY PLANNING QUESTIONNAIRE
FOR TANKERS
Appendix 2 - Survey Planning Questionnaire to Survey Programme

The following information will enable the owner in co-operation with International Ship Classification to develop a survey programme complying with the requirements of ISC Rules and 2011 ESP Code. It is essential that the owner provides, when completing the present questionnaire, up-to-date information. The present questionnaire, when completed, shall provide all information and material required by ISC Rules and 2011 ESP Code.

1. General Particulars

Input basic information and parameters.

Ship's name:	NI*******2
IMO number:	94***20
Flag State:	China
Port of registry:	Nanjing
Owner:	Na********** Transport and Trade Co., Ltd.
Recognized organization:	International Ship Classification
Gross tonnage:	4359
Deadweight (metric tonnes):	6552.71
Date of build:	November 8, 2010

The owner is to indicate the means of access to the structures of each area in the table below subject to close-up survey and thickness measurement.

2. Information on access provision for close-up surveys and thickness measurement

The owner shall indicate, in the table below, the means of access to the structures subject to close-up survey and thickness measurement. A close-up survey is an examination where the details of structural components are within the close visual inspection range of the attending surveyor, i.e. preferably within reach of hand.

Tank No.	Structure	C(Cargo)/ B(Ballast)	Permanent Means of Access	Temporary staging	Rafts	Ladders	Direct access	Other means (please specify)
F.P.	Fore Peak	B	X			X		
A.P.	Aft Peak	B	X			X		
Wing	Underdeck	B	X					

Tanks	Side shell	B	X					
	Bottom transverse	B	X					
	Longitudinal	B	X					
	Transverse	B	X					
Wing Tanks	Underdeck	C		X				
	Side shell	C		X				
	Bottom transverse							
	Longitudinal	C		X				
	Transverse	C		X				
Centre Tanks	Underdeck							
	Bottom transverse							
	Transverse							

The wing tanks with both cargo oil tanks (C) and ballast tanks (B) are to be listed

For structures that do not apply (do not exist), leave the cell blank.

Note: To be filled with "X" in all columns except for "Other means (please specify)" as applicable.

Details of the inert gas plant and tank cleaning procedures:

Details of the inert gas plant and tank cleaning procedures:

(a) Inert Gas System installed: **Yes** ☐ **No** ☒

-Details of inert gas plant:_____

-Indicate average oxygen content during inerting:_____

(b) Cargo Tank Cleaning Procedures:

i. Indicate the frequency of the tank washing, especially uncoated tanks:

- After cargo discharging: Yes

-Before dry docking: Yes

ii. Washing medium used:

-Crude Oil: **Yes** ☐ **No** ☒

-Heated seawater: **Yes** ☒ **No** ☐

-Other medium (specify): Nil.

~~**For oil tankers:** *History of cargo with H_2S content or heated cargo for the last 3 years together with indication as to whether cargo was heated and where available, Marine Safety Data Sheets (MSDS)*:*~~
For chemical tankers: *History of heated cargo for the last 3 years together with indication as to whether cargo was heated.*
The vessel had carried Phenol, Palm oil, Paraxylene for 8 voyages in recent 3 years.

For chemical tankers, history of heated cargo for the last 3 years together with indication as to whether cargo was heated. For example, the carriage of cargoes requiring heating, including Paraxylene, Phenol, Palm oil, etc., is to be documented.

* Refer to resolution MSC.150(77) on Recommendation for material safety data sheets for MARPOL Annex I cargoes and marine fuel oils.

The owner is to fill in the table below and to provide details of the results of their inspections for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area in accordance with the requirements of this Chapter.

3. Owner's inspection

Using a format similar to that of the table below (which is given as an example), the owner shall provide details of the results of their inspections, for the last 3 years on all cargo and ballast tanks and void spaces within the cargo area, including peak tanks.

Tank No.	Corrosion Protection ①					Coating extent ②				Coating Condition ③				Structural Deterioration ④	Tank Damage History ⑤		
	HC	SH	SC	A	NP	U	M	L	C	G	F	P	RC	Y/N	DR	L	CV
Cargo centre tanks																	
Cargo wing tanks																	
No.1 Cargo Tank (P)	**HC-N**								X	X				N			
No.1 Cargo Tank (S)	**HC-N**								X	X				N			
No.2 Cargo Tank(P)	**HC-N**								X	X				N			
No.2 Cargo Tank(S)	**HC-N**								X	X				N			
No.3 Cargo Tank(P)	**HC-N**								X	X				N			
No.3 Cargo Tank(S)	**HC-N**								X	X				N			
No.4 Cargo Tank(P)	**HC-N**								X	X				N			
No.4 Cargo Tank(S)	**HC-N**								X	X				N			
No.5 Cargo Tank(P)	**HC-N**								X	X				N			
No.5 Cargo Tank(S)	**HC-N**								X	X				N			
No.6 Cargo Tank(P)	**HC-N**								X	X				N			
No.6 Cargo Tank(S)	**HC-N**								X	X				N			
Slop																	
Slop Tank(P)	X								X	X				N			
Slop Tank(S)	X								X	X				N			
Ballast tanks																	
NO.1 BWT(P)	**HC-N**			X					X	X				N			
NO.1 BWT(S)	**HC-N**			X					X	X				N			
NO.2 BWT(P)	**HC-N**			X					X	X				N			
NO.2 BWT(S)	**HC-N**			X					X	X				N			
NO.3 BWT(P)	**HC-N**			X					X	X				N			
NO.3 BWT(S)	**HC-N**			X					X	X				N			
NO.4 BWT(P)	**HC-N**			X					X	X				N			
NO.4 BWT(S)	**HC-N**			X					X	X				N			

NO.5 BWT(P)	**HC-N**			X					X	X				N			
NO.5 BWT(S)	**HC-N**			X					X	X				N			
NO.6 BWT(P)	**HC-N**			X					X	X				N			
NO.6 BWT(S)	**HC-N**			X					X	X				N			
SPACE T/C	**HC-N**			X					X	X				N			
Aft peak tank	**HC-N**			X					X	X				N			
Fore peak tank	**HC-N**			X					X	X				N			
Miscellaneous spaces																	

Abbreviation:

① HC-N: Hard coating not subject to PSPC and PSPC (Void Space)
HC-B: Hard coating applied in dedicated seawater ballast tanks (PSPC)
HC-C: Hard coating applied in cargo oil tank spaces (PSPC)
HC-V: Hard coating applied in void spaces (PSPC)
SH = Semi Hard Coating SC = Soft coating A = Anodes NP = No protection
② U=Upper part M=Middle part L=Lower part C=Complete
③ G=Good F=Fair P=Poor RC=Recoated (during the last 3 years)
④ N = No findings recorded Y= Findings recorded, description of findings shall be attached to this questionnaire.
⑤ DR=Damage & Repair L=Leakage CV= Conversion, description shall be attached to this questionnaire.

Notes:

(1) For sub-column marked with "HC", type of hard coating is to be filled in, if applicable;
(2) For column marked with "Structural Deterioration ④", "Y" or "N" is to be filled in;
(3) For all other columns, "X" is to be filled in as applicable.

Compared to the previous version of ESP, the signature position has been adjusted to this point. Care is to be taken not to omit it. The date is in principle to be three months prior to the commencement of the survey, and note that the signature date herein is to be earlier than the signature date of the survey programme.

Name of owner's representative:

(.....)

Signature:.....

Date: **August 7, 2020**

List the reports of port state control inspections containing hull structural related deficiencies and relevant information on rectification of the deficiencies:

Date of inspection	Port of inspection	Ship detained (Yes / No)	Description of hull structural related deficiencies / PSC report No.	Description of deficiencies rectification / PSC report No.

When checking the PSC inspection report of the last ESP inspection so far on board (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken.), if there are defects related to the hull structure in the inspection results, the relevant information is to be listed in this section, including a brief description of the hull structure defects and related corrective measures.

Key points: This article can be filled in two ways: one is to fill in key points of PSC defects, the other is to refer to PSC report.

5. Safety Management System

List nonconformities related to hull maintenance, including the associated corrective actions:			
Description of hull structural related non-conformities	Non-conformities given by	Corrective actions	Date of verification

If there are any non-conformities related to hull structure maintenance in the ISM external audit since the last ESP survey (For ships normally under 10 years of age, the report is to be kept on board for the interval of the first special survey and the interval between the first and second special surveys. For ships over 10 years of age, the interval between the special survey and the intermediate survey is to be taken), relevant information is to be listed in this section, including a brief description of hull structure defect nonconformities and relevant corrective actions.

6. Name and address of the approved thickness measurement firm

Name of firm: He********** Technology Service Co.,Ltd.

Address: No.9**********an City

In view of the fact that at the time of preparing this programme, the owner may not have determined which thickness measuring firm to choose, it is suggested to fill in "—" or "will be advised at the time of survey" or temporarily write the name of a thickness measurement firm which is to be supplemented or modified at the time of survey.

Appendix 3.1 - Corrosion And Wastage Allowance of Hull Structure

This Appendix does not apply to the ships constructed in accordance with PART NINE of ISC Rules (2012 version) and its 2013 and 2014 amendments or PART NINE of ISC Rules (2015 version) and its subsequent versions (including amendments).

1 For a ship constructed in accordance with ISC rules and the keel of which was laid on or after 15 January 1983, the renewal thickness of hull plating and structural members is not to be less than the value obtained by multiplying their as-built thickness and the relevant percentage shown in Table 1 below:

Table 1

Structural member	Minimum renewal thickness	
	L≥90 m	L<90 m
① Strength deck plating, side shell, top strake, bilge strake, bottom shell, flat plate keel, inner bottom, continuous longitudinal bulkhead, hopper tank and topside tank plating. ② Main longitudinal continuous members, e.g. deck girders, hatch side girders, side girders, bottom girders, bulkhead girders, continuous hatch coamings. ③ Main transverse members, e.g. side frame webs, deck transverses, double plate floors, bulkhead webs, watertight and oiltight transverse bracket plates. ④ Transverse bulkhead plating in holds, upper and lower bulkhead stool sloping plating, watertight bulkhead plating in deep tanks.	**80%**	**75%**
Other plating and members, e.g. deck within line of openings, deck longitudinals, side longitudinals, bottom longitudinals, inner bottom longitudinals, bulkhead longitudinals, face plates of frames, brackets of members, hatch covers, non-continuous hatch coamings, sea chests.	**75%**	**70%**

2 For tanks constructed in accordance with ISC Rules and the scantlings of which as required by ISC Rules are indicated in their plans, the thickness reduction of hull plating and structural members caused by corrosion and wastage is not to be more than the value obtained by multiplying the thickness specified in ISC Rules and the relevant percentage shown in Table 1 above.

Appendix 3.2 - Minimum Thickness Table of Hull Structure

Minimum thickness of hull structures is given in the following table:

Area or location	Original as-built thickness (mm)	Minimum thickness (mm)	Substantial corrosion thickness (mm)	Remarks
Deck				
Plating				
Longitudinals				
Longitudinal girders				
Bottom				
Plating				
Longitudinals				
Longitudinal girders				
Inner bottom				
Plating				
Longitudinals				
Longitudinal girders				
Ship side				
Plating				
Longitudinals				
Longitudinal girders				
Longitudinal bulkhead				
Plating				
Longitudinals				
Longitudinal girders				
Transverse bulkheads				
Plating				
Stiffeners				
Transverse web frames, floors and stringers				
Plating				
Flanges				
Stiffeners				
Cross ties				
Flanges				
Webs				

If applicable, and (b) is selected in item 10 of the preceding text,the form is to be filled in item by item according to the corrosion criteria given by the classification society for various hull structures.

Remarks: The wastage allowance tables shall be attached to the survey programme.