



CCS Rule Change Notice For:
RULES FOR CLASSIFICATION OF SEA-GOING
STEEL SHIPS

Version: 2023. RCN No.1

Effective date: Jan.1, 2023

Beijing

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Brief Introduction

Part One Provisions Of Classification

1. Incorporation of UR Z7(Rev.29/2022.05), Revised minimum requirements for thickness measurements at special surveys.
2. Incorporation of UR Z10.3(Rev.20/2022.05) , Revised the thickness measurement requirements for chemical tankers(age ≤of 5 years old) for special survey.
3. Incorporation of UR Z10.4(Rev.20/2022.05) , Revised the thickness measurement requirements for double hull oil tankers (age ≤of 5 years old) for special survey.
4. Incorporation of UR Z29 and add detailed requirements for remote survey.
5. In accordance with the requirements of chapter 0, part ten of the rules, a description of the notations R1(D)/ R2(D)/ R3(D) is added.

Part Three Machinery Installations

- 1 According to URM60 Rev.1, the provision that alarm and safety protection items of main gas turbine can be adjusted according to FMEA results is added.
- 2 According to URM61 Rev.1, the requirements for starting conditions (cold state) and hot state starting times of the main engine are deleted.
- 3 According to URM73 Rev. 1, the applicability of the technical requirements for the diesel engine turbocharger with application for certification is modified.

Part Four Electrical Installations

Revision is made to permissible value of temperature rise of electrical equipment in accordance with URE13 Rev.3 Corr.1.

Part Ten Ships in Restricted Service

In the existing PART TEN, ships of restricted service include ships of restricted service engaged on international voyages, and ships engaged on non-international (domestic or regional) voyages as specified by the Administration. Ships engaged on non-international (domestic or regional) voyages need not fully comply with requirements for ships engaged on international voyages in terms of classification technical requirements related to statutory requirements. In order to distinguish between these two types of ships of restricted service, and avoid the misunderstanding of having the same technical requirements when ships are resold and changed from non-international (domestic or regional) voyage to international voyage, it is necessary to make distinction between class notations, and Rx (D) is added on the basis of existing class notations.

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PART ONE Provisions Of Classification

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CHAPTER 2 SCOPE AND CONDITIONS OF CLASSIFICATION

Appendix 1 LIST OF CLASS NOTATIONS FOR SEA-GOING SHIPS

Service Restriction or Limitations Notations

Table C

Class notation	Description		Technical requirements
R1	Service category 1	Within 200 (summer / tropical*) or 100 (winter*) n mile off the shore	Ch. 2, Pt. 10 of the Rules
R2	Service category 2	Within 20 (summer / tropical*) or 10 (winter*) n mile off the shore	
R3	Service category 3	Sheltered waters**	

CHAPTER 5 SURVEYS AFTER CONSTRUCTION

Section 1 GENERAL PROVISIONS

5.1.5 Definitions

5.1.5.1 For the purpose of this Chapter, the following definitions apply to all ships:

~~(22) Remote survey is a means by which the surveyor obtains the process or survey process information of the same degree as the on-site survey through the application of mobile Internet technology without attending the survey site.~~

5.1.5.2 The following definitions are added for oil tankers in addition to those in 5.1.5.1 of this Chapter:

(1) A **ballast tank** is a tank which is used ~~solely~~ **primarily** the carriage of salt water ballast.

5.1.19 Remote survey

5.1.19.1 Remote survey carried out on or after 1 January 2023 shall comply with the requirements of Appendix 24 of this chapter. For CCS Special requirements about remote survey, refer to CCS "Ship Remote Inspection Guideline". ~~Remote survey is applicable to the following surveys of ships classed with CCS: documents and materials (verification, change or re-issuance upon client's application), damages and repairs (slight sea damages, damages to the equipment and machinery, and equipment replacement), elimination of class conditions, extension (class conditions, propeller shaft, boiler), continuous machinery survey and change of the owner or name of vessel, etc.~~

5.1.19.2 ~~Notwithstanding the provisions of 5.1.19.1 of this Chapter:~~

~~(1) for some of these surveys (such as damages and repairs), CCS still needs to carry out case assessment before remote survey;~~

~~(2) for surveys which may involve statutory requirements (excluding documents and materials), the requirements of the flag State are to be taken into account when conducting remote survey.~~

~~5.1.19.3 Annual survey, intermediate survey and special survey generally cannot be carried out by means of remote survey.~~

~~5.1.19.4 If the applicant proposes remote survey other than those specified in 5.1.19.1 to 5.1.19.3 of this Chapter, CCS will carry out assessment on a case-by-case basis.~~

Section 4 HULL AND EQUIPMENT SURVEYS

5.4.4 Special surveys

Minimum Requirements for Thickness Measurements at Special Surveys Table 5.4.4.2(17)①

Special Survey No.1 Age ≤ 5	Special Survey No.2 5 < Age ≤ 10	Special Survey No.3 10 < Age ≤ 15	Special Survey No.4 and Subsequent Age > 15
(1) Suspect areas throughout the ship	(1) Suspect areas throughout the ship	(1) Suspect areas throughout the ship	(1) Suspect areas throughout the ship
	(2) One transverse section of deck plating in way of a cargo space within the amidships 0.5L (in way of a cargo space, if applicable)	(2) Two transverse sections within the amidships 0.5L (in way of two different cargo spaces, if applicable)	(2) A minimum of three transverse sections in way of cargo spaces within the amidships 0.5L (in way of cargo space, if applicable)
		(3) All cargo hold hatch covers and coamings (plating and stiffeners)	(3) All cargo hold hatch covers and coamings (plating and stiffeners)
		(4) Internals in forepeak and afterpeak ballast tanks	(4) Internals in forepeak and afterpeak ballast tanks
			(5) All exposed main deck plating full length
			(6) Representative exposed superstructure deck plating (poop, bridge, and forecastle deck)
			(7) Lowest strake and strakes in way of 'tween decks of all transverse bulkheads in cargo spaces together with internals in way
			(8) All wind- and water strakes, port and starboard, full length
			(9) All keel plates full length. Also, additional bottom plates in way of cofferdams, machinery space, and aft end of tanks
			(10) Plating of sea chests. Shell plating in way of overboard discharges as considered necessary by the attending Surveyor

Notes: For thickness measurements reporting, the forms included in Appendix 13.1A of this Chapter may be used, as appropriate. The annexed forms are a recommendation and are not a mandatory requirement.

1. Thickness measurement locations are to be selected to provide the best representative sampling of areas likely to be most exposed to corrosion, considering cargo and ballast history and arrangement and condition of protective coatings.
2. Thickness measurements of internals may be specially considered by the Surveyor if the hard protective coating is in GOOD condition.
3. For ships less than 100 m in length, the number of transverse sections required at special survey No.3 may be reduced to one (1), and the number of transverse sections required at subsequent special surveys may be reduced to two (2).
4. For ships more than 100 m in length, at special survey No.3, thickness measurements of exposed deck plating within amidships 0.5L may be required.
5. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, thickness measurement is to be done of accessible parts of hatch covers structures.

Section 6 ADDITIONAL REQUIREMENTS FOR HULL AND EQUIPMENT SURVEYS OF OIL TANKERS

5.6.4 Special surveys

5.6.4.4 Extent of thickness measurement

Minimum Requirements for Thickness Measurements at Special Surveys of Oil Tankers ~~(Including Double-Hull Oil Tankers)~~, Ore/Oil Ships, etc. Table 5.6.4.4(1)①a

Special Survey No.1 Age ≤ 5	Special Survey No.2 5 < Age ≤ 10	Special Survey No.3 10 < Age ≤ 15	Special Survey No.4 and Subsequent Age > 15
1. One section of deck plating for the full beam of the ship within the cargo area (in way of a ballast tank, if any, or a cargo tank used primarily for water ballast) ⁽⁴⁾ . 2. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Tables 5.6.4.3(2)① and ② of this Section. 3. Suspect areas	1. Within the cargo area: a) Each deck plate. b) One transverse section. 2. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Tables 5.6.4.3(2)① and ② of this Section. 3. Suspect areas. 4. Selected wind and water strakes outside the cargo area	1. Within the cargo area: a) Each deck plate. b) Two transverse sections ⁽²⁾ ①. 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 according to Tables 5.6.4.3(2)① and ② of this Section. 3. Suspect areas. 4. Selected wind and water strakes outside the cargo area	1. Within the cargo area: a) Each deck plate. b) Three transverse sections ⁽²⁾ ①. c) Each bottom plate. 2. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Tables 5.6.4.3(2)① and ② of this Section. 3. Suspect areas. 4. All wind and water strakes, full length

Notes: (1) The bracketed explanation does not apply to double hull oil tankers.

(2) At least one section is to include a ballast tank within 0.5L amidships.

Minimum Requirements for Thickness Measurements at Special Surveys of Double Hull Oil Tankers

Table 5.6.4.4(1)①b

Special Survey No.1 Age ≤ 5	Special Survey No.2 5 < Age ≤ 10	Special Survey No.3 10 < Age ≤ 15	Special Survey No.4 and Subsequent Age > 15
1. Suspect areas	1. Suspect areas 2. Within the cargo area: .1 Each deck plate .2 One transverse section 3. Selected wind and water strakes outside the cargo area 4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.6.4.3(2) ②	1. Suspect areas 2. Within the cargo area: .1 Each deck plate .2 Two transverse section(1) .3 All wind and water strakes 3. Selected wind and water strakes outside the cargo area 4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.6.4.3(2) ②	1. Suspect areas 2. Within the cargo area: .1 Each deck plate .2 Three transverse section(1) .3 Each bottom plate 3. All wind and water strakes, full length. 4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.6.4.3(2) ②

Notes: (1) : at least one section is to include a ballast tank within 0.5L amidships.

Section 8 ADDITIONAL REQUIREMENTS FOR HULL AND EQUIPMENT SURVEYS OF

CHEMICAL TANKERS

5.8.4 Special surveys

5.8.4.4 Extent of thickness measurement

Minimum Requirements for Thickness Measurements at Special Survey of Chemical Tankers

Table 5.8.4.4(1)a

Special Survey No.1 Age ≤ 5	Special Survey No.2 5 < Age ≤ 10	Special Survey No.3 10 < Age ≤ 15	Special Survey No.4 and Subsequent: Age > 15
1. Suspect areas	1. Suspect areas	1. Suspect areas	1. Suspect areas
2. One section of deck plating for the full beam of the ship within the cargo area (in way of a ballast tank, if any, or a cargo tank used primarily for water ballast)	2. Within the cargo area: a) Each deck plate b) One transverse section	2. Within the cargo area: a) Each deck plate b) Two transverse sections ⁽¹⁾ c) All wind and water strakes	2. Within the cargo area: a) Each deck plate b) Three transverse sections ⁽¹⁾ c) Each bottom plate
	3. Selected wind and water	3. Selected wind and water	3. All wind and water strakes,

	strakes outside the cargo area	strakes outside the cargo area	full length
4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.8.4.3(2)① or ② of this Section, as appropriate	4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.8.4.3(2)① or ② of this Section, as appropriate	4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.8.4.3(2)① or ② of this Section, as appropriate	4. Measurements, for general assessment and recording of corrosion pattern, of those structural members subject to close-up survey according to Table 5.8.4.3(2)① or ② of this Section, as appropriate

Note: (1) At least one section is to include a ballast tank within 0.5L amidships.

Appendix 24 Remote Classification Surveys

1. General

The survey of ships may utilize different methods and concepts. This UR contains principles and minimum requirements for carrying out remote surveys.

Remote survey will only be appropriate provided the level of assurance is not compromised, and the survey is carried out with the same effectiveness as and is equivalent to, a survey carried out with attendance on board by a Surveyor.

1.1 Application

These requirements apply to all vessels, self-propelled or not. These requirements are not mandatory for offshore units.

1.2 Definitions

1.2.1 Remote Survey

A “Remote Survey” is a process of verifying that a ship and its equipment are in compliance with the rules of the Classification Society where the verification is undertaken, or partially undertaken, without attendance on board by a surveyor.

1.2.2 Information and Communication Technology (ICT)

Information and Communication Technology (ICT) are the technologies used in the scope of remote surveys for gathering, storing, retrieving, processing, analysing, and transmitting information which includes both software and hardware

Notes:

1. ‘Attendance on board by a surveyor’ means physical attendance on board the ship by a surveyor.
2. Remote classification activities not requiring a survey, such as some administrative tasks, are not to be considered as remote surveys.
3. An administrative task is a task where a survey decision is not being made, for example reissue of a certificate or record following a correction, or an update to the ship’s records held by the Classification Society or a document review.

2. Requirements for equivalency

The requirements for equivalency of a remote survey to a survey attended on board by a Surveyor include:

- eligibility of the remote survey
- qualification of Surveyors
- planning of the remote survey
- performance of the remote survey
- assessment of the remote survey

- reporting

Equivalency is obtained when, with the use of available ICT, a surveyor can perform a survey remotely being able to:

- obtain the supporting and technical evidence required according to the applicable rules,
- verify applicable survey items and relevant tests,

and the results of the remote survey provide the same level of assurance obtained with attendance on board by a Surveyor.

2.1 Eligibility of the remote survey

Eligibility of the remote survey is to be decided based on type and scope of the requested survey, in accordance with 3.1 and, if applicable, flag State Administration acceptance and possible instructions, when the classification survey is also related to a statutory item, and the Society is carrying out the statutory survey on behalf of the flag State Administration.

A remote survey is deemed eligible when it provides the same level of assurance, according to the requirements for equivalency, as if it was conducted with attendance on board by a Surveyor.

Remote surveys are generally to be carried out with internet connection allowing a live streaming visual examination, although, at the discretion of the Surveyor, a combination of remote survey methods (see 2.4) may be used. For simple/limited verifications, other types of ICT may be accepted by the Surveyor.

2.2 Qualification and monitoring of Surveyors

2.2.1 Qualification

Surveyors engaged in remote surveys are to be qualified as per standard procedures for the type of ship and type of survey, i.e., in accordance with IMO RO Code (MSC.349(92)), IACS Procedural Requirement PR 7, and the Society's training and qualification scheme.

Additional training is to be carried out, covering the ICT used for the remote survey, in relation to the applicable remote survey scope and methods, in order to fully qualify the Surveyor engaged in remote surveys.

The additional training required for qualification for remote surveys shall be in accordance with the Society's procedures and shall provide:

- knowledge of the operation of the Classification Society's remote survey software, if applicable.
- knowledge of the technical and procedural aspects related to remote surveys.
- knowledge of the connectivity aspects related to remote survey.

2.2.2 Monitoring

The monitoring of a Surveyor qualified for remote surveys is to be carried out in accordance with IACS Procedural Requirement PR 6.

2.2.3 Surveyor's Record

Records of Surveyor's training and qualification for remote surveys shall be maintained and updated as per the Society's standard procedures.

Notes:

1. Society's personnel engaged in remote classification activities not requiring a survey (refer to 1.2.1) are to be trained and qualified according to the Society's standard procedures.
2. On board personnel/Crew:

- Training and qualification of on board personnel/Crew are regulated by the STCW Convention and is a prerogative of the flag State Administration.

- The ship's flag State Administration may require that the Safety Management System of the ship is updated by the Company to include provisions for specific training of the crew engaged in remote surveys.

2.3 Planning of the remote survey

Planning of the remote survey is required to ensure that the remote survey is carried out in accordance with the applicable requirements. The content of the planning shall be based on the scope of the remote survey

To ensure that the Surveyor can properly plan the remote survey and communicate with personnel/crew, so that the survey is carried out according to the applicable rules, adequate means are to be available enabling the Surveyor and allowing the Society to:

- properly interact with personnel/crew involved in the remote survey, before and during the survey process,

- agree on ICT means to be used

- verify that personnel/crew involved in the remote survey are suitably skilled to use the electronic devices and/or software used by the Society to perform the remote survey,

- acquire as deemed necessary information on identity and ranking of personnel/crew involved in the remote survey,

- provide the survey item/scope to the personnel/crew involved in facilitating the remote surveys, including the tests that will be performed,

communicate, during the remote survey, additional actions depending on the evidence to be collected.

One or more of the following means is to be provided for planning the remote survey:

- live-streaming video and audio connection

- exchange of data / electronic documents

- other means acceptable to the Society

The owner is to provide the necessary facilities for the safe execution of the survey.

2.4 Performance of the remote survey

To ensure that the Surveyor can properly perform the remote survey according to the applicable rules, the available evidence must allow the attending surveyor to:

- examine and assess a survey item and/or a group of items and/or supporting documents,

- verify and assess applicable tests and/or services.

The evidence provided to the Surveyor is subject to the technical evaluation and final acceptance by the Surveyor with respect to the completeness and accuracy, necessary to perform the requested survey according to the applicable requirements.

One or more of the following evidence is to be provided for performing the remote survey:

- live-streaming video and audio

- recorded videos provided by the Owner's representative

- photos provided by the Owner's representative

- other data and/or supporting documents acceptable to the Society.

2.5 Assessment of the remote survey

The Surveyor shall evaluate all evidence received and accept them before crediting the remote survey.

The means used for the remote survey must allow the Surveyor to collect the necessary evidence that will be examined according to the Surveyor's professional judgement in order to satisfactorily complete and credit the relevant survey items.

In case the Surveyor, according to their professional judgement, deems that the remote survey does not provide the same level of assurance as a survey with attendance on board by a Surveyor, the Surveyor may decide not to credit the relevant survey items.

3. Scope and procedures

A remote survey will be only appropriate provided it reaches the same level of assurance as, and is equivalent to, a survey attended on board by a Surveyor.

3.1 Scope - Eligible survey items

A remote survey may be proposed as an alternative to a survey attended on board by a Surveyor for the surveys listed in Table 1.

When the classification survey is also related to a statutory item, and the Society is carrying out the statutory survey on behalf of the flag State Administration, then the flag State Administration acceptance is required, and possible additional requirements are to be complied with.

The Surveyor may require to confirm the results of the remote survey, by a survey attended on board by a Surveyor, to credit the relevant survey items, in case the remote survey is not carried out to the Surveyor's satisfaction or it is required by the Classification Society.

Table 1: Eligible remote survey items:

<u>No.</u>	<u>Surveys and related items eligible to remote survey</u>	<u>Live streaming required (See Notes)</u>
<u>1</u>	<u>Postponement, issuance, deletion of Condition of Class</u>	<u>X (1)</u>
<u>2</u>	<u>Postponement of Class surveys</u>	<u>X (1)</u>
<u>3</u>	<u>Items of Continuous Survey for Machinery (UR Z18) or Planned Maintenance Scheme (UR Z20, PMS)</u>	<u>X (1)</u>
<u>4</u>	<u>Occasional survey for change of ship's name</u>	<u>X (1)</u>
<u>5</u>	<u>Occasional survey for loss of anchor</u>	<u>X (1)</u>
<u>6</u>	<u>Occasional survey for minor machinery or equipment damage</u>	<u>X (1)</u>
<u>7</u>	<u>Occasional survey for minor hull damage</u>	<u>X (1)</u>
<u>8</u>	<u>Occasional survey for minor deficiencies/defects not subject to a Condition of Class</u>	<u>X (1)</u>
<u>9</u>	<u>In-water bottom survey</u>	<u>X</u>
<u>10</u>	<u>Specified items of a class periodical survey (excluding additional specific items of initial or renewal surveys), including completion of remaining items of a part held class periodical survey</u>	<u>X (1)(2)</u>
<u>11</u>	<u>Non-propelled / un-manned barges/pontoon – annual surveys when no survey of hull compartments is due</u>	<u>X</u>
<u>12</u>	<u>Minor retrofit / installation/upgrade of equipment</u>	<u>X (1)</u>
<u>13</u>	<u>Documentary or data based initial / periodical / renewal / occasional verifications and surveys</u>	

Notes:

1. "(1)" means that live streaming may not be required for minor survey scope or that a combination remote survey method, as listed in 2.4, may be used at the sole discretion of the Society.
2. "(2)" means that pure documentary verifications are eligible in accordance with item 13.
3. Live streaming may be required for surveys not marked X in the Table, depending on the survey scope

at the sole discretion of the Society.

4. “Minor” in the items 6, 7, 8 and 12 means that the item can be surveyed remotely according to requirements for equivalency given in 2

3.2 Procedures

3.2.1 Eligibility

Refer to 2.1.

3.2.2 Digital information quality, completeness, and accuracy

Final appraisal of the quality of digital information is at the discretion of the Surveyor, who is to be satisfied with the content and the quality of digital information collected, and the survey carried out, allowing the Surveyor to confirm its completion.

The Owner is responsible for the completeness and accuracy of digital information provided. The digital information submitted by the Owner to the Surveyor is to reflect the real situation of the surveyed item. The date and time, when a photo or video was taken are to be made available to the Surveyor or identifiable from its metadata.

The Society is to collect and store digital information as evidence of the survey. It is not necessary to store all of digital information received; the exact digital information stored shall support the survey decision and is to be decided by the Surveyor crediting the survey.

The remote survey is carried out under the supervision and upon instructions of the Surveyor, who is in charge of crediting the remote surveys. A surveyor attendance on board may be required to complete the survey, upon the Surveyor's request and at their discretion.

3.2.3 Requirements for a remote survey when live streaming is not used

When live streaming is not used, communication and digital information collection are to be performed through an ICT channels (such as emails, data streams and clouds), which is to be accepted by the Classification Society prior to the survey.

The Owner's representative is to confirm the identity of the ship at the commencement of the survey.

3.2.4 Requirements for a remote survey when live streaming is used

The Owner's is to ensure that:

- the Owner's representative is attending onboard and has access to the areas intended to be surveyed
- the Owner's representative has at his disposal a 2-ways visual and audible communication means complying with the requirements in 4.
- ICT solution is available on the communication means and meets the requirement described in 4.

In the case these requirements cannot be fulfilled, the remote survey may be rejected. The Surveyor is to verify the identity of the ship at the commencement of the survey by live streaming.

3.3 Hardware and ICT solution

Refer to 4.1.

3.4 Requirements for Connectivity

The Owner's representative is to ensure that internet connectivity tests are carried out before the survey and that proper connectivity is available and maintained during the survey.

When remote survey by live streaming is being undertaken, a connection that enables live streaming between the Surveyor and the Owner's representative attending on board is required. The quality of the live streaming connection (audio and video) is to ensure proper communication and to allow the Surveyor to carry out the survey remotely, to the Surveyor's satisfaction. In the case where a live streaming connection with the Surveyor is not possible or is not continuous at the place of the survey (e.g., Engine Room), partly online sequences (where the Owner is able to capture pictures and videos offline of those items not covered by live streaming) may be accepted by the Surveyor.

4. Information and Communication Technology (ICT)

This section outlines the minimum requirements for the use of ICT that can capture images, record video and/or live stream video or other data from a ship as considered acceptable to the Society.

4.1 Hardware

The Owner is responsible for ensuring that all hardware installations on board used for the remote survey shall comply with the applicable requirements relevant for use and location on board, including hazardous areas. The ICT shall typically consist of:

- A host computer device, to receive the streaming of images/data/video. This is usually a laptop or desktop computer compatible with the software application used for the remote survey
- On board standalone device which may include digital cameras capable of capturing videos/photos/data
- On board smart device compatible with the applicable software/technology
- Communication accessories like headphones and microphone for the noisy environment as applicable and as deemed necessary

Notes: The smart device may be a smartphone, tablet, computer, wearable device, smart glass, digital camera, or any other device which can be connected to the network and capable of transmitting the necessary data/images to shore.

The communication equipment used for the live streaming shall have the following minimum functionality:

- both ends shall simultaneously see the same image/videos in near real-time (i.e., live streaming)
- two-way direct voice communication
- possibility to take screenshots

When using a portable device on board for live streaming, the movement of the handheld device may affect the stability of the video and the image, leading to lower quality outputs. When necessary, a suitable anti-shake device shall be used to provide proper stability.

Notes:

1. The host computer screen is to be able to present an image quality that is sufficient to enable a survey decision to be made
2. Portable equipment on board shall be equipped with a power capacity suitable for the intended scope and time of the survey

4.2 Internet Connectivity (coverage and speed)

For internet connectivity requirements on board, refer to 3.4.

The on board smart devices shall have the capability of transmitting the images/video/data over a Cellular, Wi-Fi or Satellite Connection to the remote Surveyor.

When live streaming communication is applied, the internet connection shall have sufficient and stable bandwidth capacity to ensure quality (such as resolution and frame rate) of the direct colour image/video and voice communication to the remote survey location to the satisfaction of the Surveyor.

4.3 Software and data security:

The software used for the remote survey is to be acceptable to the Society. The overall function and ability of the software used to ensure the security of data shall be evaluated prior to use as per the below requirements.

The Surveyor shall normally control the live video call, providing instructions to the on-site personnel/crew and supervising survey activities for capturing relevant information. The on board device shall have the capability of transmitting the data over a Cellular, Wi-Fi, or Satellite Connection to the Surveyor.

The software used to perform the remote survey may also be provided with technologies that support the Surveyor in the process of making a decision, such as:

- Artificial Intelligence (AI) for the recognition and the classification of defects,
- Internet of things (IoT) for collecting parameters and evaluating acceptability/working condition of machinery and equipment,
- Data driven verification or other means considered acceptable by the Society.

The above software and technologies are to be evaluated and accepted by the Society in each case.

When considering the use of software/applications and other technologies, data protection shall be considered in accordance with applicable requirements of the Classification Society before the remote survey is commenced. The software/application used to perform the remote survey is to be compatible with the technical requirements detailed in this paragraph; in addition, the software used is to comply with the Classification Society's applicable requirements for:

- cybersecurity
- data protection and confidentiality for the transmitted data

When not provided by the Society itself, the audio/video software or application used to perform the remote survey is to be accepted by the Society.

During the survey preparation, it is the Owner's responsibility to ensure that their data security policies are implemented as per the Company's Safety Management System.

Notes: The Company's SMS may take into account IMO resolution MSC.428(98), MSC-FAL.1/Circ.3 and IACS Rec.166.

5. Recording of evidence and reporting of survey

5.1 Recording of Evidence

5.1.1 Required evidence (refer to 2.4)

In principle, live streaming video and audio shall be applied to remote surveys as a primary means (refer to Table 1 in 3.1).

Additionally, and/or alternatively, one or more of the following evidence may be submitted or verified as requested by the Surveyor during remote survey so that the Surveyor is able to verify conditions of survey items:

- Recorded video and audio
- Photos
- Master's/chief engineer's statement
- Ship's logbook
- Owner's confirmation

5.1.1.1 Live streaming video and audio

Live streaming video and audio using ICT shall be in accordance with the requirements in 4

5.1.1.2 Recorded videos/photos

For the recorded videos/photos, the following information is to be available:

- confirmation that they were actually taken on the ship by the Owner's representative
- date and time when they were taken
- identity of the personnel/crew responsible for taking evidence

5.1.1.3 Master's/chief engineer's statement

Recorded videos/photos provided by the Owner's representative may be supplemented with a statement signed by the master and/or the chief engineer confirming the condition of the items shown in the evidence. The final evaluation of the remote survey by the Surveyor is to be based on all of the provided evidence, and it does not delegate the responsibility to the master/chief engineer's statement only.

5.1.1.4 Ship's logbook

The Master shall make entries into ship's logbook on the following occasions and submit copies of the relevant pages when requested by the Surveyor:

- when a remote survey is carried out by the Surveyor
- when videos/photos are taken and submitted to the Surveyor with the master's/chief engineer's statement and additional documents as applicable.

5.1.1.5 Owner's confirmation

The Owner's representative or the master is to confirm the correctness and completeness of the provided information and evidence (if any) relevant to the condition of the items requested to be surveyed. This confirmation may be included in the survey application.

5.1.2 Retaining/filing evidence

The evidence submitted by the Owner's representative or master shall be retained/filed in accordance with the Society's procedures which shall include:

- type of evidence to be retained/filed
- duration/location to be retained/filed

It is not required for the Society to record and save live streaming video and audio as evidence unless the Surveyor considers it necessary.

5.1.3 Other supporting documents

The Surveyor may request the Owner's representative or master to submit supplementary documents such

as ship's maintenance reports and record for the operation of machinery, and equipment and service reports issued by manufacturers, service suppliers or service providers.

While the Surveyor shall verify that the documents are duly prepared and issued to the ship, they may not be required to be retained/filed by the Society as evidence.

5.2 Reporting of remote survey

The report of a remote survey shall be issued in accordance with the Society's procedure. The survey report shall also include the following additional information:

- indication that the survey was carried out remotely
- description of the means used during the remote survey
- indication of the provided evidence
- confirmation of the flag State Administration's authorization, when applicable

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PART THREE Machinery Installations

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CHAPTER 8 GAS TURBINES

Section 4 FITTINGS

8.4.10 Alarming devices

8.4.10.1 Unless the FMEA required in item 8.1.6.2(3) proves otherwise, mainMain gas turbines are to be provided with alarming and safeguards devices in accordance with the requirements of Table 8.4.10.1, they can be added or omitted, taking into account the result of FMEA specified in item 8.1.6.2(3).

CHAPTER 9 DIESEL ENGINES

Section 1 GENERAL PROVISIONS

9.1.11 Turbochargers^①

Section 5 STARTING ARRANGEMENTS

9.5.1 Mechanical starting arrangements

9.5.1.6 Where the main engines are arranged for starting by compressed air, at least two starting air receivers of about equal capacity are to be fitted, which can be used independently. The total capacity of air receivers is to be sufficient to provide, without their being replenished, not less than 12 consecutive starts alternating between ahead and astern of each main engine of the reversible type, and not less than 6 starts of each main non-reversible type engine connected to a controllable pitch propeller or other device enabling the start without opposite torque. ~~The number of starts refers to engine in cold and ready to start conditions. Additional number of starts may be required when the engine is in the warm running condition.~~ When other consumers such as auxiliary engines starting systems, control systems, whistle, etc., are to be connected to starting air receivers, their air consumption is also to be taken into account. Regardless of the above, for multi-engine installations the number of starts required for each engine may be reduced to 3 times, the total number of starts is not to be less than 12 times, but unnecessarily exceed 18 times.

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- ① (1) The requirements of 9.1.11, 9.1.12.3, 9.6.2, 9.6.6.2, 9.6.10 and 9.6.11 apply to turbochargers with the date of an application for certification of the new turbocharger type or of a turbocharger type that has undergone substantive modifications in respect of the one previously type approved, or for renewal of an expired type approval certificate on or after 1 ~~July~~ January 2046~~23~~. Turbochargers with an existing type approval on 1 January 2023 are not required to be re-type approved in accordance with the requirement until the current Type Approval reaches its expiry date. The requirements of 9.6.12 apply to turbochargers with the date of application for certification of an individual turbocharger on or after 1 ~~July~~ January 2046~~23~~.
- (2) The “date of application for certification” is the date of whatever document CCS requires/accepts as an application or request for certification of a new turbocharger type or of a turbocharger type that has undergone substantive modifications in respect of the one previously type approved, or for renewal of an expired type approval certificate.

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PART FOUR Electrical Installations

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CHAPTER 3 CONSTRUCTION AND TESTING OF ELECTRICAL EQUIPMENT

Section 2 ROTATING MACHINES

3.2.3.2 Where the ambient air temperature for motor operation is more than 45°C, the permissible temperature rise is to be reduced by an amount equal to the difference between the actual air ambient temperature and 45°C, based on the specified value given in Table 3.2.3.1.

Where the ambient air temperature for motor operation is less than 45°C, the permissible temperature rise is to be increased by a value equal to the difference between the actual ambient air temperature and 45°C, based on the specified value given in Table 3.2.3.1, and the increased value is not to be more than 15 K.

For motors fitted with water-cooled heat exchanger, the temperature of cooling water at the inlet of the heat exchanger may be regarded as the ambient air temperature for motor operation.

Limits of Temperature Rise (K) of Air-Cooled Machines **Table**
3.2.3.1

Thermal classification		A			E			B			F			H		
Method of measurement [®]		Th	R	ETD	Th	R	ETD	Th	R	ETD	Th	R	ETD	Th	R	ETD
Item	Part of machine															
1a)	AC windings of machines having output of 5,000 kW (or kVA) or more	–	55	60	–	–	–	–	75	80	–	95	100	–	120	125
1b)	AC windings of machines having output above 200 kW (or kVA), but less than 5,000 kW (or kVA)	–	55	60	–	70	–	–	75	85	–	100	105	–	120	125
1c)	AC windings of machines having output of 200 kW (or kVA) or less, other than those of items 1d) or 1e) ^①	–	55	–	–	70	–	–	75	–	–	100	–	–	120	–
1d)	AC windings of machines having rated output of less than 600 W (or VA) ^①	–	60	–	–	70	–	–	80	–	–	105	–	–	125	–
1e)	AC windings and/or encapsulated windings of		60	–	–	70	–	–	80	–	–	105	–	–	125	–

	self-cooled machines without a fan (IC410) ^①															
2	Windings of armatures having commutators	45	55	–	60	70	–	65	75	–	80	100	–	100	120	–
3	Field windings of AC and DC machines other than those of item 4	45	55	–	60	70	–	65	75	–	80	100	–	100	120	–
4a)	Field windings of synchronous machines with cylindrical rotors having DC excitation windings embedded in slots, excluding synchronous induction motors	–	–	–	–	–	–	–	85	–	–	105	–	–	130	–
4b)	Stationary field windings of DC machines having more than one layer	45	55	–	60	70	–	65	75	85	80	100	105	100	120	130
4c)	Single-layer low-resistance field windings of AC and DC machines and compensating windings of DC machines having more than one layer	55	55	–	70	70	–	75	75	–	95	95	–	120	120	–
4d)	Single-layer windings of AC and DC machines with exposed bare or varnished metal surfaces and single-layer compensating windings of DC machines ^②	60	60	–	75	75	–	85	85	–	105	105	–	130	130	–

5	Permanently short-circuited windings	The temperature rise or the temperature of any part is not to be detrimental to the insulation of that part or to any other part adjacent to it
6	Commutators and slip rings and their brushes and brush gears	The temperature rise or the temperature of any part is not to be detrimental to the insulation of that part or any other part adjacent to it. In addition, the temperature rise or the temperature of a commutator or slip ring is not to exceed that at which the combination of brush grade and commutator or slip ring material can handle the current over the full operating range
7	Structural components (other than bearings) and magnetic cores regardless of contact with insulation	The temperature rise or the temperature of any part is not to be detrimental to the insulation of that part or to any other part adjacent to it

Thermal classification		B			F			H		
Method of measurement		Th	R	ETD	Th	R	ETD	Th	R	ETD
Item	Part of machine									
1a)	AC windings of machines having output of 5,000 kW (or kVA) or more	=	75	80	=	100	105	=	120	125
1b)	AC windings of machines having output above 200 kW (or kVA), but less than 5,000 kW (or kVA)	=	75	85	=	100	110	=	120	135
1c)	AC windings of machines having output of 200 kW (or kVA) or less, other than those of items 1d) or 1e)	=	75	=	=	100	=	=	120	=
1d)	AC windings of machines having rated output of less than 600 W (or VA)	=	80	=	=	105	=	=	125	=
1e)	AC windings and/or encapsulated windings of self-cooled machines without a fan (IC410)	=	80	=	=	105	=	=	125	=
2	Windings of armatures having commutators	65	75	=	80	100	=	100	120	=
3	Field windings of AC and DC machines other than those of item 4	65	75	=	80	100	=	100	120	=
4a)	Field windings of synchronous machines with cylindrical rotors having DC excitation windings embedded in slots, excluding	=	85	=	=	110	=	=	130	=

	<u>synchronous induction motors</u>									
4b)	<u>Stationary field windings of DC machines having more than one layer</u>	<u>65</u>	<u>75</u>	<u>85</u>	<u>80</u>	<u>100</u>	<u>110</u>	<u>100</u>	<u>120</u>	<u>135</u>
4c)	<u>Single-layer low-resistance field windings of AC and DC machines and compensating windings of DC machines having more than one layer</u>	<u>75</u>	<u>75</u>	<u>—</u>	<u>95</u>	<u>100</u>	<u>—</u>	<u>120</u>	<u>120</u>	<u>—</u>
4d)	<u>Single-layer windings of AC and DC machines with exposed bare or varnished metal surfaces and single-layer compensating windings of DC machines</u>	<u>85</u>	<u>85</u>	<u>—</u>	<u>105</u>	<u>110</u>	<u>—</u>	<u>130</u>	<u>130</u>	<u>—</u>
<u>Notes:</u> 1) <u>The temperature rise or the temperature of any part is not to be detrimental to the insulation of that part or to any other part adjacent to it.</u> 2) <u>With application of the superposition test method to windings of items 1c), 1d) and 1e), with insulation classes B and F, the limits of temperature rise given for the resistance method may be exceeded by 5 K.</u> 3) <u>Multi-layer windings are to comply with the requirement of item 4d) where the under layers are all in contact with the circulating primary coolant.</u> 4) <u>Th – thermometer, R – resistance, and ETD – embedded temperature detector.</u>										

Notes:

- ① With application of the superposition test method to windings of machines rated 200 kW (or kVA) or less with insulation classes A, B, E and F, the limits of temperature rise given for the resistance method may be exceeded by 5 K.
- ② Multi-layer windings are also to be included where the under layers are all in contact with the circulating primary coolant.
- ③ Th—thermometer, R—resistance, and ETD—embedded temperature detector.

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PART TEN Ships in Restricted Service

CONTENTS

CHAPTER 0 GENERAL..... 1

Section 2 GENERAL PROVISIONS..... 1

CHAPTER 0 GENERAL

Section 2 GENERAL PROVISIONS

0.1.1 Scope of application

0.1.1.1 The provisions of this PART apply to ships navigating and/or operating in restricted service, including ships engaged in international and non-international (domestic or regional) voyages and/or operation.

0.1.1.2 Where not covered by this PART, the relevant provisions of PART ONE to PART EIGHT of the Rules are to be complied with.

0.1.1.3 Where relevant provisions for ships engaged on non-international voyages in this PART are not consistent with the requirements of the Administration of the flag State, the requirements of the Administration of the flag State are to be satisfied and relevant requirements of this PART may not be satisfied.

0.1.2 Definitions

0.1.2.1 Restricted service is a generic term of the service categories 1, 2 and 3. For limitation for navigation of each service category, see Table 2.1.3.1, Section 1, Chapter 2, PART ONE of the Rules.

0.1.3 Class notations

0.1.3.1 Ships complying with this PART and to which the provisions of 0.1.1.3 are not applicable will be assigned one of the following notations:

- (1) Service category 1: R1;
- (2) Service category 2: R2;
- (3) Service category 3: R3.

0.1.3.2 Ships engaged in non-international voyages complying with this PART and to which the provisions of 0.1.1.3 are applicable will be assigned one of the following notations:

- (1) Service category 1: R1(D);
- (2) Service category 2: R2(D);
- (3) Service category 3: R3(D).

0.1.3.3 For ships assigned with notations R1, R2, R3, the survey after construction is to comply with the relevant requirements of PART ONE of the Rules; for ships assigned with notations R1(D), R2(D), R3(D), the survey after construction is to comply with the relevant requirements of Chapter 1 of this PART.

0.1.3.24 Other service restriction or limitation notations are given in Table B, Appendix 1, Chapter 2, PART ONE of the Rules.