Z7 Hull Classification Surveys

(1990) (Rev.1 1990) (Rev.2 1992) (Rev.3 1994) (Rev.4 1996) (Rev.5 July 1998) (Rev.6 April 1999) (Rev.7 Nov 2000) (Rev.8 Mar 2002) (Rev.9 Oct 2002) (Rev.10 Apr 2004) (Rev.11 June 2005) (Rev.12 Jan. 2006) (Rev.13 Aug 2006) (Rev.14 Oct 2006) (Rev.15 Nov 2007) (Rev.16 Mar 2009) (Rev.17 May 2010) (Rev.18 Jan 2011) (Rev.19 July 2011) (Rev.20 May 2013) (Rev.21 Jan 2014) (Rev.22 Feb 2015) (Rev.23 July 2015) (Rev.24 Feb 2016)

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Note:

1. Changes introduced in Rev.7 are to be applied by all Members and Associates from 1 July 2001.

2. Rev.10 deletes para. 5.4.5 and is effective from the date of adoption by Council (21 Apr 2004).

3. Change introduced in Rev.11 are to be uniformly implemented from 1 July 2006.

4. Changes introduced in Rev. 12 are to be uniformly applied by IACS Societies on surveys commenced on or after 1 January 2007.

5. Changes introduced in Rev. 13 (paragraph 1.1.5) are to be uniformly applied by IACS Societies at special and annual surveys, as applicable, carried out after the ship has been made compliant with the requirements of SOLAS II-1/23-3 and II-1/25, and commenced on or after 1 July 2007 (see UR Z7.1 Rev. 4).

6. Changes introduced in Rev. 14 are to be uniformly applied by IACS Societies on surveys commenced on or after 1 Jan 2008.

7. Changes introduced in Rev.15 are to be uniformly applied by IACS Societies for surveys commenced on or after the 1 January 2009.

8. Changes introduced in Rev.16 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2010.

   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.

9. Changes introduced in Rev.17 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2011.

10. Changes introduced in Rev.18 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 January 2012.

11. Changes introduced in Rev.19 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2012.

12. Changes introduced in Rev.20 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2014.

13. Changes introduced in Rev.21 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 January 2015.

14. Changes introduced in Rev.22 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2016.

15. Changes introduced in Rev.23 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2016.

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16. Changes introduced in Rev.24 are to be uniformly applied by IACS Societies for surveys commenced on or after 1 July 2017.

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1. General

1.1 Application

1.1.1 These requirements apply to all self-propelled vessels.

1.1.2 For additional items, refer to Z1.

1.1.3 For additional requirements for hull structure, piping systems and ballast tanks applicable to tankers, bulk carriers, chemical tankers, double hulled tankers, double side skin bulk carriers, general dry cargo ships and liquefied gas carriers, refer to Z10.1, Z10.2, Z10.3, Z10.4, Z10.5, Z7.1 and Z7.2 respectively.

1.1.4 For additional requirements applicable to cargo installations on ships carrying liquefied gases in bulk, refer to Z16.

1.1.5 For additional requirements applicable to water level detectors fitted on single hold cargo ships, refer to UR Z7.1.

1.1.6 Special consideration may be given in application of relevant sections of this Unified Requirement to commercial vessels owned or chartered by Governments, which are utilized in support of military operations or service.

1.2 Definitions

1.2.1 Ballast Tank
A Ballast Tank is a tank that is being used primarily for salt water ballast.

1.2.2 Spaces
Spaces are separate compartments including holds and tanks.

1.2.3 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.

1.2.4 Transverse Section
A Transverse Section includes all longitudinal members such as plating, longitudinals and girders at the deck, sides, bottom, inner bottom, and longitudinal bulkhead. For transversely framed vessels, a transverse section includes adjacent frames and their end connections in way of transverse sections.

1.2.5 Representative Space
Representative Spaces are those which are expected to reflect the conditions of other spaces of similar type and service and with similar corrosion prevention systems. When selecting representative spaces, account is to be taken of the service and repair history on board and identifiable Critical Structural Areas and/or Suspect Areas.

1.2.6 Critical Structural Area
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 ships or sister ships, if applicable, to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the ship.

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1.2.7 Suspect Area
Suspect Areas are locations showing Substantial Corrosion and/or are considered by the Surveyor to be prone to rapid wastage.

1.2.8 Substantial Corrosion
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.

1.2.9 Corrosion Prevention System
A Corrosion Prevention System is normally considered a full hard protective coating.

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.

1.2.10 Coating Condition
Coating condition is defined as follows:

GOOD	condition with only minor spot rusting
FAIR	condition with local breakdown at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition
POOR	condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration

1.2.11 Prompt and Thorough Repair
A Prompt and Thorough Repair is a permanent repair completed at the time of survey to the satisfaction of the Surveyor, therein removing the need for the imposition of any associated condition of classification.

1.2.12 Special consideration
Special consideration or specially considered (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are to be taken to confirm the actual average condition of the structure under the coating.

1.2.13 Air pipe head
Air pipe heads installed on the exposed decks are those extending above the freeboard deck or superstructure decks.

1.2.14 Cargo Length Area
Cargo Length Area is that part of the ship which contains all cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces.

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1.3 Repairs

1.3.1 Any damage in association with wastage over the allowable limits (including buckling, grooving, detachment or fracture), or extensive areas of wastage over the allowable limits, which affects or, in the opinion of the Surveyor, will affect the vessel's structural, watertight or weathertight integrity, is to be promptly and thoroughly (see 1.2.11) repaired. Areas to be considered include:

- side shell frames, their end attachments and adjacent shell plating;
- deck structure and deck plating;
- bottom structure and bottom plating;
- watertight or oiltight bulkheads;
- hatch covers and hatch coamings;
- items in 3.2.3.5, 3.2.3.6 and 3.2.3.8.

For locations where adequate repair facilities are not available, consideration may be given to allow the vessel to proceed directly to a repair facility. This may require discharging the cargo and/or temporary repairs for the intended voyage.

1.3.2 Additionally, when a survey results in the identification of structural defects or corrosion, either of which, in the opinion of the Surveyor, will impair the vessel's fitness for continued service, remedial measures are to be implemented before the ship continues in service.

1.3.3 Where the damage found on structure mentioned in Para. 1.3.1 is isolated and of a localised nature which does not affect the ship's structural integrity, consideration may be given by the surveyor to allow an appropriate temporary repair to restore watertight or weather tight integrity and impose a Recommendation/Condition of Class in accordance with IACS PR 35, with a specific time limit.

1.4 Thickness measurements and close-up surveys

In any kind of survey, i.e. special, intermediate, annual or other surveys having the scope of the foregoing ones, thickness measurements, when required by Table 1, of structures in areas where close-up surveys are required, shall be carried out simultaneously with close-up surveys.

For structure built with a material other than steel, alternative thickness measurement requirements may be developed and applied as deemed necessary by the Society.

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2. Special Survey

2.1 Schedule

2.1.1 Special Surveys are to be carried out at 5 years intervals to renew the Classification Certificate.

2.1.2 The first Special Survey is to be completed within 5 years from the date of the initial classification survey and thereafter 5 years from the credited date of the previous Special Survey. However, an extension of class of 3 months maximum beyond the 5th year can be granted in exceptional circumstances.

In this case, the next period of class will start from the expiry date of the Special Survey before the extension was granted.

2.1.3 For surveys completed within 3 months before the expiry date of the Special Survey, the next period of class will start from the expiry date of the Special Survey. For surveys completed more than 3 months before the expiry date of the Special Survey, the period of class will start from the survey completion date. In cases where the vessel has been laid up or has been out of service for a considerable period because of a major repair or modification and the owner elects to only carry out the overdue surveys, the next period of class will start from the expiry date of the special survey. If the owner elects to carry out the next due special survey, the period of class will start from the survey completion date.

2.1.4 The Special Survey may be commenced at the 4th Annual Survey and be progressed with a view to completion by the 5th anniversary date. When the Special Survey is commenced prior to the 4th Annual Survey, the entire survey is to be completed within 15 months if such work is to be credited to the Special Survey.

2.1.5 A survey planning meeting is to be held prior to the commencement of the survey.

2.1.6 Concurrent crediting to both Intermediate Survey (IS) and Special Survey (SS) for surveys and thickness measurements of spaces are not acceptable.

2.2 Scope

2.2.1 The Special Survey is to include, in addition to the requirements of the Annual Survey, examination, tests and checks of sufficient extent to ensure that the hull, equipment and related piping, as required in 2.2.12, are in satisfactory condition and fit for the intended purpose for the new period of class of five years to be assigned, subject to proper maintenance and operation and the periodical surveys being carried out at the due dates.

2.2.2 The examinations of the hull are to be supplemented by thickness measurements and testing as required in 2.2.11 and 2.2.12, to ensure that the structural integrity remains effective. The aim of the examination is to discover Substantial Corrosion, significant deformation, fractures, damages or other structural deterioration, that may be present.

2.2.3 The Special Survey is to include examination of underwater parts per Z3.

2.2.4 The anchors and chain cables are to be ranged, examined and the required complement and condition verified. The chain locker, holdfasts, hawse pipes and chain stoppers are to be examined and pumping arrangements of the chain locker tested. At Special Survey No. 2 and subsequent Special Surveys, chain cables are to gauged and renewed in cases where their mean diameter is worn below the limits allowed by the Society.

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2.2.5 All spaces including holds and their 'tween decks where fitted; double bottom, deep, ballast, peak and cargo tanks; pumprooms, pipe tunnels, duct keels, machinery spaces, dry spaces, cofferdams and voids are to be internally examined including the plating and framing, bilges and drain wells, sounding, venting, pumping and drainage arrangements. Internal examination of fuel oil, lube oil and fresh water tanks is to be carried out in accordance with Table 3.

2.2.6 Engine room structure is to be examined. Particular attention is to be given to tank tops, shell plating in way of tank tops, brackets connecting side shell frames and tank tops, and engine room bulkheads in way of tank top and bilge wells. Particular attention is to be given to the sea suctions, sea water cooling pipes and overboard discharge valves and their connections to the shell plating. Where wastage is evident or suspect, thickness measurements are to be carried out, and renewals or repairs made when wastage exceeds allowable limits.

2.2.7 Where provided, the condition of corrosion prevention system of ballast tanks is to be examined. For ballast tanks, excluding double bottom tanks, where a hard protective coating is found in POOR condition and it is not renewed, where soft or semi-hard coating has been applied, or where a hard protective coating was not applied from time of construction, the tanks in question are to be examined at annual intervals. Thickness measurements are to be carried out as deemed necessary by the surveyor.

2.2.8 When such breakdown of hard protective coating is found in double bottom ballast tanks and it is not renewed, where a soft or semi-hard coating has been applied, or where a hard protective coating was not applied from the time of construction, the tanks in question may be examined at annual intervals. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurements are to be carried out.

2.2.9 Boundaries of double-bottom, deep, ballast, peak, and other tanks, including holds adapted for the carriage of salt water ballast, are to be tested with a head of liquid to the top of air pipes or to near the top of hatches for ballast/cargo holds. 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. 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. The Surveyor may extend the testing as deemed necessary.

2.2.10 Hatch Covers and Coamings
The hatch covers and coamings are to be surveyed as follows:

2.2.10.1 A thorough inspection of the items listed in 3.2.3, including close-up survey of hatch cover plating and hatch coaming plating, is to be carried out. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, close-up survey shall be done of accessible parts of hatch covers structures.

2.2.10.2 Checking of the satisfactory operation of all mechanically operated hatch covers is to be made, including:

- stowage and securing in open condition;
- proper fit and efficiency of sealing in closed conditions;
- operational testing of hydraulic and power components, wires, chains and link drives.

2.2.10.3 Checking the effectiveness of sealing arrangements of all hatch covers by hose testing or equivalent is to be carried out.

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2.2.11 Thickness measurements are to be carried out in accordance with Table 1. The Surveyor may extend the thickness measurements as deemed necessary. When thickness measurements indicate substantial corrosion, the extent of thickness measurements is to be increased to determine areas of substantial corrosion. Table 2 may be used as guidance for these additional thickness measurements. These extended thickness measurements are to be carried out before the survey is credited as completed.

2.2.12 All bilge and ballast piping systems are to be examined and operationally tested to working pressure to attending Surveyor's satisfaction to ensure that tightness and condition remain satisfactory.

2.2.13 For all ships except for passenger ships, automatic air pipe heads are to be completely examined (both externally and internally) as indicated in Table 4.

For designs where the inner parts cannot be properly inspected from outside, this is to include removal of the head from the air pipe. Particular attention is to be paid to the condition of the zinc coating in heads constructed from galvanised steel.

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3. Annual Surveys

3.1 Schedule

Annual Surveys are to be held within 3 months before or after each anniversary date of the date of the initial classification survey or the completion of the last Special Survey.

3.2 Scope

3.2.1 The survey is to consist of an examination for the purpose of ensuring, as far as practicable, that the hull, hatch covers, hatch coamings, closing appliances, equipment and related piping are maintained in a satisfactory condition.

3.2.2 For additional items refer to Z1.

3.2.3 Examination of weather decks, ship side plating above water line, hatch covers and coamings.

3.2.3.1 Confirmation is to be obtained that no unapproved changes have been made to the hatch covers, hatch coamings and their securing and sealing devices since the last survey.

3.2.3.2 Where mechanically operated steel covers are fitted, checking the satisfactory conditions, as applicable, of:

- hatch covers;
- tightness devices of longitudinal, transverse and intermediate cross junctions (gaskets, gasket lips, compression bars, drainage channels);
- clamping devices, retaining bars, cleating;
- chain or rope pulleys;
- guides;
- guide rails and track wheels;
- stoppers, etc.;
- wires, chains, gypsies, tensioning devices;
- hydraulic system essential to closing and securing;
- safety locks and retaining devices.

Where portable covers, wooden or steel pontoons are fitted, checking the satisfactory condition where applicable, of:

- wooden covers and portable beams, carriers or sockets for the portable beam, and their securing devices;
- steel pontoons,
- tarpaulins;
- cleats, battens and wedges;
- hatch securing bars and their securing devices;
- loading pads/bars and the side plate edge;
- guide plates and chocks;
- compression bars, drainage channels and drain pipes (if any).

3.2.3.3 Checking the satisfactory condition of hatch coaming plating and their stiffeners, where applicable.

3.2.3.4 Random checking of the satisfactory operation of mechanically operated hatch covers is to be made including:

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- stowage and securing in open condition;
- proper fit and efficiency of sealing in closed condition;
- operational testing of hydraulic and power components, wires, chains, and link drives.

3.2.3.5 Examination of the weld connection between air pipes and deck plating.

3.2.3.6 External examination of all air pipe heads installed on the exposed decks.

3.2.3.7 Examination of flame screens on vents to all bunker tanks.

3.2.3.8 Examination of ventilators, including closing devices, if any.

3.2.4 Suspect Areas

Suspect Areas identified at previous surveys are to be examined. Thickness measurements are to be taken of the areas of substantial corrosion and the extent of thickness measurements is to be increased to determine areas of substantial corrosion. Table 2 may be used as guidance for these additional thickness measurements. These extended thickness measurements are to be carried out before the annual survey is credited as completed.

Note: these requirements are not applicable to cargo tanks of oil tankers, chemical tankers and double hull oil tankers, surveyed in accordance with URs Z10.1, Z10.3 and Z10.4.

3.2.5 Examination of Ballast Tanks

3.2.5.1 Examination of ballast tanks when required as a consequence of the results of the Special Survey and Intermediate Survey is to be carried out. When considered necessary by the surveyor, or where extensive corrosion exists, thickness measurement is to be carried out. If the results of these thickness measurements indicate that Substantial Corrosion is found, then the extent of thickness measurements is to be increased to determine areas of substantial corrosion. Table 2 may be used as guidance for these additional measurements. These extended thickness measurements are to be carried out before the annual survey is credited as completed.

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4. Intermediate Survey

4.1 Schedule

4.1.1 The Intermediate Survey is to be carried out either at or between the second and third Annual Survey.

4.1.2 Those items which are additional to the requirements of the Annual Surveys may be surveyed either at or between the 2nd and 3rd Annual Survey.

4.1.3 A survey planning meeting is to be held prior to the commencement of the survey.

4.1.4 Concurrent crediting to both Intermediate Survey (IS) and Special Survey (SS) for surveys and thickness measurements of spaces are not acceptable.

4.2 Scope

4.2.1 The scope of the second or third Annual Survey is to be extended to include the following:

4.2.1.1 For ships between 5 and 10 years of age, a general, internal examination of representative ballast tanks is to be carried out. If there is no hard protective coating, soft or semi-hard coating, or POOR coating condition, the examination is to be extended to other ballast spaces of the same type.

4.2.1.2 For ships over 10 years of age, a general, internal examination of all spaces used for water ballast is to be carried out.

4.2.2 If such examinations reveal no visible structural defects, the examination may be limited to a verification that the corrosion prevention system remains effective.

4.2.3 For ballast tanks, excluding double bottom ballast tanks, if there is no hard protective coating, soft or semi-hard coating, or POOR coating condition and it is not renewed, the spaces in question are to be internally examined at annual intervals.

4.2.4 When such conditions are found in water ballast double bottom tanks, the spaces in question may be internally examined at annual intervals.

4.2.5 In the case of dry cargo ships over 15 years old, other than bulk carriers subject to Z10.2 or Z10.5 or general dry cargo ships subject to Z7.1, an internal examination of selected cargo holds is to be carried out.

4.2.6 In the case of ships over 10 years of age, other than ships engaged in the carriage of dry cargoes only or ships subject to Z10.1, Z10.3, Z10.4 or Z7.2, an internal examination of selected cargo spaces is to be carried out.

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5. Preparations for Survey

5.1 Conditions for survey

5.1.1 The Owner is to provide the necessary facilities for a safe execution of the survey.

5.1.2 Tanks and spaces are to be safe for access, i.e. gas freed, ventilated and illuminated.

5.1.3 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. 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.

5.1.4 Sufficient illumination is to be provided to reveal corrosion, deformation, fractures, damages or other structural deterioration.

5.1.5 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.

5.1.6 Casings, ceilings or linings, and loose insulation, where fitted, are to be removed, as required by the Surveyor, for examination of plating and framing. Compositions on plating are to be examined and sounded, but need not be disturbed if found adhering satisfactorily to the plating.

5.1.7 In refrigerated cargo spaces the condition of the coating behind the insulation is to be examined at representative locations. The examination may be limited to verification that the protective coating remains effective and that there are no visible structural defects. Where POOR coating condition is found, the examination is to be extended as deemed necessary by the Surveyor. The condition of the coating is to be reported. If indents, scratches, etc., are detected during surveys of shell plating from the outside, insulations in way are to be removed as required by the Surveyor, for further examination of the plating and adjacent frames.

5.2 Access to structures

5.2.1 For survey, means are to be provided to enable the surveyor to examine the hull structure in a safe and practical way.

5.2.2 For survey in cargo holds and water ballast tanks, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

- 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;
- other equivalent means.

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5.3 Equipment for survey

5.3.1 Thickness measurement is normally to be carried out by means of ultrasonic test equipment. The accuracy of the equipment is to be proven to the Surveyor as required. Thickness measurements are to be carried out by a firm approved by the society in accordance with UR Z17, except that in respect of measurements of non-ESP ships less than 500 gross tonnage and all fishing vessels, the firm need not be so approved.

5.3.2 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.

5.4 Survey at sea or at anchorage

5.4.1 Survey at sea or at anchorage may be accepted provided the Surveyor is given the necessary assistance from the personnel onboard. Necessary precautions and procedures for carrying out the survey are to be in accordance with 5.1, 5.2 and 5.3.

5.4.2 A communication system is to be arranged between the survey party in the tank or space and the responsible officer on deck. This system must also include the personnel in charge of ballast pump handling if boats or rafts are used.

5.4.3 When boats or rafts are used, appropriate life jackets are to be available for all participants. Boats or rafts are to have satisfactory residual buoyancy and stability even if one chamber is ruptured. A safety checklist is to be provided.

5.4.4 Surveys of tanks by means of boats or rafts may only be undertaken at the sole discretion of the Surveyor, who is to take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions.

See footnote*

Reference is made to IACS Recommendation 39 - Guidelines for use of Boats or Rafts for Close-up surveys.

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TABLE 1

MINIMUM REQUIREMENTS FOR THICKNESS MEASUREMENTS AT SPECIAL SURVEY

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 15 < Age
1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.
	2) One transverse section of deck plating in way of a cargo space within the amidships 0.5L	2) Two transverse sections within the amidships 0.5L in way of two different cargo spaces.	2) A minimum of three transverse sections in way of cargo spaces within the amidships 0.5L.
		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 tanks.	4) Internals in forepeak and afterpeak 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.

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			10) Plating of seachests. Shell plating in way of overboard discharges as considered necessary by the attending surveyor

Notes:

<u>For thickness measurements reporting, the forms included in Annex I or Annex II may be used, as appropriate. The annexed forms are a recommendation and are not a mandatory requirement under this UR Z7.</u>

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 meters 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 meters in length, at Special Survey No. 3, thickness measurements of exposed deck plating within amidship 0.5 L may be required.

5. Subject to cargo hold hatch covers of approved design which structurally have no access to the internals, thickness measurement shall be done of accessible parts of hatch covers structures.

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TABLE 2

GUIDANCE FOR ADDITIONAL THICKNESS MEASUREMENTS IN WAY OF SUBSTANTIAL CORROSION

STRUCTURAL MEMBER	EXTENT OF MEASUREMENT	PATTERN OF MEASUREMENT
Plating	Suspect area and adjacent plates.	5 point pattern over 1 square meter.
Stiffeners	Suspect area.	3 measurements each in line across web and flange.

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TABLE 3

MINIMUM REQUIREMENTS FOR INTERNAL EXAMINATION AT HULL SPECIAL SURVEYS OF FUEL OIL, LUBE OIL AND FRESH WATER TANKS

Tank	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
Fuel Oil Bunkertanks				
-Engine Room	None	None	One	One
-Cargo Length Area	None	One	Two	Half, minimum 2
Lube Oil	None	None	None	One
Fresh Water	None	One	All	All

Notes

1) These requirements apply to tanks of integral (structural) type.
2) If a selection of tanks is accepted to be examined, then different tanks are to be examined at each special survey, on a rotational basis.
3) Peak tanks (all uses) are subject to internal examination at each special survey.
4) At special surveys no 3 and subsequent surveys, one deep tank for fuel oil in the cargo length area is to be included, if fitted.

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TABLE 4

SURVEY REQUIREMENTS FOR AUTOMATIC PIPE HEADS AT SPECIAL SURVEYS

Special Survey no.1 Age ≤ 5	Special Survey no.2 5 < age ≤ 10	Special Survey No.3 and subsequent Age > 10
- Two air pipe heads, one port and one starboard, located on the exposed decks in the forward 0.25 L, preferably air pipes serving ballast tanks. - Two air pipe heads, one port and one starboard, on exposed decks, serving spaced aft of 0.25 L, preferably air pipes serving ballast tanks. (1) (2)	- All air pipe heads located on the exposed decks in the forward 0.25L. - At least 20% of air pipe heads on the exposd decks serving spaces aft of 0.25 L, preferably air pipes serving ballast tanks (1) (2)	- All air pipe heads located on the exposed decks (3)

(1) The selection of air pipe heads to be examined is left to the attending Surveyor.

(2) According to the results of this examination, the Surveyor may require the examination of other heads located on the exposed decks.

(3) Exemption may be considered for air pipe heads where there is substantial evidence of replacement after the last special survey.

Z7
(cont'd)

Sheet 1

ANNEX I*

IACS RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS OF SHIPS*

*Note: Annex I is recommendatory.

Z7
(cont'd)

1. This document may be used for recording thickness measurements as required by the IACS Unified Requirement Z7.

2. Reporting forms TM1-G, TM2-G (i) and (ii), TM3-G, TM4-G, TM5-G (sheets 4-9) may be used for recording thickness measurements and the maximum allowable diminution is to be stated.
   The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

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Sheet 6 - Report TM2-G (ii) for recording the thickness measurement of shell and deck plating at transverse sections - shell plating.

Sheet 7 - Report TM3-G for recording the thickness measurement of longitudinal members at transverse sections.

Sheet 8 - Report TM4-G for recording the thickness measurement of transverse bulkheads.

Sheet 9 - Report TM5-G for recording the thickness measurement of miscellaneous structural members.

Z7
(cont'd)

Sheet 3

GENERAL PARTICULARS

Ship's name:-

IMO number:-

Class identity number:-

Port of registry:-

Gross tons:-

Deadweight:-

Date of build:-

Classification Society:-

Name of Company performing thickness measurement:-

Thickness measurement company certified by:-

Certificate No:-

Certificate valid from.....to.....

Place of measurement:-

First date of measurement:-

Last date of measurement:-

Special survey/intermediate survey due:-*

Details of measurement equipment:-

Qualification of operators:-

Report Number:- consisting of Sheets

Names of operator:..... Name of surveyor:-.....

Signature of operator:-..... Signature of surveyor:-.....

Company official stamp:- Classification Society Official Stamp:-

* Delete as appropriate

Z7
(cont'd)

TM1-G **Report on THICKNESS MEASUREMENT of ALL DECK PLATING, ALL BOTTOM SHELL PLATING or SIDE SHELL PLATING*** (* - delete as appropriate)

Sheet 4

Ship's name..... Class Identity No. ..... Report No. .....

STRAKE POSITION																	
PLATE POSITION	No. or Letter	Org. Thk. mm	Forward Reading						Aft Reading						Mean Diminution %		Maximum Allowable Diminution
			Gauged		Diminution P		Diminution S		Gauged		Diminution P		Diminution S				
			P	S	mm	%	mm	%	P	S	mm	%	mm	%	P	S	mm
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
12th																	

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM1-G

1. This report may be used for recording the thickness measurement of:-

   A - All strength deck plating within cargo length area.

   B - Keel, bottom shell plating and bilge plating within the cargo length area.

   C - Side shell plating that is all wind and water strakes within the cargo length area.

   D - Side shell plating that is selected wind and water strakes outside the cargo length area.

2. The strake position is to be cleared indicates as follows:-

   2.1 For strength deck indicate the number of the strake of plating inboard from the stringer plate.

   2.2 For bottom plating indicate the number of the strake of plating outboard from the keel plate.

   2.3 For side shell plating give number of the strake of plating sheerstrake and letter as shown on shell expansion.

3. Only the deck plating strakes outside line of openings are to be recorded.

4. Measurements are to be taken at the forward and aft areas of all plates and the single measurements recorded are to represent the average of multiple measurements.

5. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

TM2-G (i) **Report on THICKNESS MEASUREMENT OF SHELL AND DECK PLATING (one, two or three transverse sections)**

Sheet 5

Ship's name..... Class Identity No. ..... Report No. .....

STRENGTH DECK AND SHEERSTRAKE PLATING

	FIRST TRANSVERSE SECTION AT FRAME NUMBER									SECOND TRANSVERSE SECTION AT FRAME NUMBER									THIRD TRANSVERSE SECTION AT FRAME NUMBER								
STRAKE POSITION	No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
Stringer Plate																											
1st strake inboard																											
2nd																											
3rd																											
4th																											
5th																											
6th																											
7th																											
8th																											
9th																											
10th																											
11th																											
12th																											
13th																											
14th																											
centre strake																											
sheer strake																											
TOPSIDE TOTAL																											

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM2-G (i)

1. This report may be used for recording the thickness measurement of:-

   Strength deck plating and sheerstrake plating transverse sections:-

   Two or three section within the cargo length area, comprising of the structural items.

2. Only the deck plating strakes outside the line of openings are to be recorded.

3. The topside area comprises deck plating, stringer plate and sheerstrake (including rounded gunwales).

4. The exact frame station of measurement is to be stated.

5. The single measurements recorded are to represent the average of multiple measurements.

6. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

TM2-G (ii) **Report on THICKNESS MEASUREMENT OF SHELL AND DECK PLATING (one, two or three transverse sections)**

Sheet 6

Ship's name..... Class Identity No. ..... Report No. .....

SHELL PLATING																													
	FIRST TRANSVERSE SECTION AT FRAME NUMBER									SECOND TRANSVERSE SECTION AT FRAME NUMBER									THIRD TRANSVERSE SECTION AT FRAME NUMBER								
STRAKE POSITION	No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		No. or Letter	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%
1st below sheer strake																												
2nd																												
3rd																												
4th																												
5th																												
6th																												
7th																												
8th																												
9th																												
10th																												
11th																												
12th																												
13th																												
14th																												
15th																												
16th																												
17th																												
18th																												
19th																												
20th																												
keel strake																												
BOTTOM TOTAL																												

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM2-G (ii)

1. This report may be used for recording the thickness measurement of:-

   Shell plating transverse sections:-

   Two or three sections within the cargo length area, comprising of the structural items.

2. The bottom area comprises keel, bottom and bilge plating.

3. The exact frame station of measurement is to be stated.

4. The single measurements recorded are to represent the average of multiple measurements.

5. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

TM3-G **Report on THICKNESS MEASUREMENT OF LONGITUDINAL MEMBERS (one, two or three transverse sections)**

Sheet 7

Ship's name..... Class Identity No. ..... Report No. .....

	FIRST TRANSVERSE SECTION AT FRAME NUMBER									SECOND TRANSVERSE SECTION AT FRAME NUMBER									THIRD TRANSVERSE SECTION AT FRAME NUMBER								
STRUCTURAL MEMBER	Item No.	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		Item No.	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S		Item No.	Org. Thk.	Max. Alwb. Dim.	Gauged		Diminution P		Diminution S	
		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%		mm	mm	P	S	mm	%	mm	%

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM3-G

1. This report may be used for recording the thickness measurement of:-

   Longitudinal Members at transverse sections:-

   Two, or three sections within the cargo length area, comprising of the appropriate structural items.

2. The exact frame station of measurement is to be stated.

3. The single measurements recorded are to represent the average of multiple measurements.

4. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

TM4-G Report on THICKNESS OF TRANSVERSE BULKHEADS

Sheet 8

Ship's name..... Class Identity No. ..... Report No. .....

LOCATION OF STRUCTURE: FRAME NO.:

STRUCTURAL COMPONENT (PLATING/STIFFENER)

	Original Thickness mm	Max. Alwb. Dim. mm	Gauged		Diminution P		Diminution S	
			Port	Starboard	mm	%	mm	%

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM4-G

1. This report form may be used for recording the thickness measurement of cargo hold transverse bulkheads.

2. The single measurements recorded are to represent the average of multiple measurements.

3. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

TM5-G Report on THICKNESS MEASUREMENT OF MISCELLANEOUS STRUCTURAL MEMBERS

Sheet 9

Ship's name..... Class Identity No. ..... Report No. .....

STRUCTURAL MEMBER:

SKETCH

LOCATION OF STRUCTURE:

Description	Org. Thk. mm	Max. Alwb. Dim. mm	Gauged		Diminution P		Diminution S	
			P	S	mm	%	mm	%

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM5-G

1. This report may be used for recording the thickness measurement of miscellaneous structural members.

2. The single measurements recorded are to represent the average of multiple measurements.

3. The maximum allowable diminution could be stated in an attached document.

Z7
(cont'd)

ANNEX II (Net Scantling Design)*

Sheet 1

IACS RECOMMENDED PROCEDURES FOR THICKNESS MEASUREMENTS OF SHIPS BUILT ACCORDING TO THE NET SCANTLING APPROACH*

*Note: Annex II (NSD) is recommendatory.

Z7
(cont'd)

1. This document may be used for recording thickness measurements of ships built according to the net scantling approach as required by the IACS Unified Requirement Z7.

2. Reporting forms TM1-G(NSD), TM2-G(NSD) (i) and (ii), TM3-G(NSD), TM4-G(NSD), TM5-G(NSD) (sheets 4-9) may be used for recording thickness measurements. The as-built thickness and the voluntary thickness addition and renewal thickness (minimum allowable thickness) are to be stated in the said forms.

Z7
(cont'd)

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Sheet 6 - Report TM2-G(NSD) (ii) for recording the thickness measurement of shell plating at transverse sections.

Sheet 7 - Report TM3-G(NSD) for recording the thickness measurement of longitudinal members at transverse sections.

Sheet 8 - Report TM4-G(NSD) for recording the thickness measurement of transverse bulkheads.

Sheet 9 - Report TM5-G(NSD) for recording the thickness measurement of miscellaneous structural members.

Z7
(cont'd)

GENERAL PARTICULARS

Sheet 3

Ships name:-

IMO number:-

Class identity number:-

Port of registry:-

Gross tons:-

Deadweight:-

Date of build:-

Classification Society:-

Name of Company performing thickness measurement:-

Thickness measurement company certified by:-

Certificate No:-

Certificate valid from.....to.....

Place of measurement:-

First date of measurement:-

Last date of measurement:-

Special survey/intermediate survey due:-*

Details of measurement equipment:-

Qualification of operators:-

Report Number:- consisting of Sheets

Names of operator:-..... Name of surveyor:-.....

Signature of operator:-..... Signature of surveyor:-.....

Company official stamp:- Classification Society Official Stamp:-

* Delete as appropriate

Z7
(cont'd)

TM1-G(NSD) Report on THICKNESS MEASUREMENT of ALL DECK PLATING, ALL BOTTOM PLATING or SIDE SHELL PLATING* (* - delete as appropriate)

Sheet 4

Ship's name..... Class Identity No..... Report No.....

STRAKE POSITION																		
PLATE POSITION	No. or Letter	As Built Thk. mm	Voluntary Thickness Addition mm	Renewal Thickness mm (a)	Forward Reading						Aft Reading						Mean Remaining Corr. Addition, mm [(c1)+(c2)]/2	
					Gauged Thk. mm (b1)		Remaining Corr. Addition, mm (c1)=(b1)-(a)				Gauged Thk. mm (b2)		Remaining Corr. Addition, mm (c2)=(b2)-(a)					
					P	S	P		S		P	S	P		S		P	S
12th forward																		
11th																		
10th																		
9th																		
8th																		
7th																		
6th																		
5th																		
4th																		
3rd																		
2nd																		
1st																		
Amidships																		
1st aft																		
2nd																		
3rd																		
4th																		
5th																		
6th																		
7th																		
8th																		
9th																		
10th																		
11th																		
12th																		

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM1-G(NSD)

1. This report may be used for recording the thickness measurement of:-

   A - All strength deck plating within cargo length area.

   B - Keel, bottom shell plating and bilge plating within the cargo length area.

   C - Side shell plating that is all wind and water strakes within the cargo length area.

   D - Side shell plating that is selected wind and water strakes outside the cargo length area.

2. The strake position is to be clearly indicated as follows:-

   2.1 For strength deck indicate the number of the strake of plating inboard from the stringer plate.

   2.2 For bottom plating indicate the number of the strake of plating outboard from the keel plate.

   2.3 For side shell plating give number of the strake of plating sheerstrake and letter as shown on shell expansion.

3. Only the deck plating strakes outside line of openings are to be recorded.

4. Measurements are to be taken at the forward and aft areas of all plates and the single measurements recorded are to represent the average of multiple measurements.

5. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules) the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

Z7
(cont'd)

TM2-G(NSD) (i) Report on THICKNESS MEASUREMENT OF SHELL AND DECK PLATING (one, two or three transverse sections)

Sheet 5

Ship's name..... Class Identity No. ..... Report No. .....

STRENGTH DECK AND SHEERSTRAKE PLATING

STRAKE POSITION	FIRST TRANSVERSE SECTION AT FRAME NUMBER										SECOND TRANSVERSE SECTION AT FRAME NUMBER										THIRD TRANSVERSE SECTION AT FRAME NUMBER									
	No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)			
					P	S	P		S						P	S	P		S						P	S	P		S	
Stringer Plate																														
1st strake inboard																														
2nd																														
3rd																														
4th																														
5th																														
6th																														
7th																														
8th																														
9th																														
10th																														
11th																														
12th																														
13th																														
14th																														
centre strake																														
sheer strake																														
TOPSIDE TOTAL																														

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM2-G(NSD) (i)

1. This report may be used for recording the thickness measurement of:-

   Strength deck plating and sheerstrake plating transverse sections:-

   One, two or three sections within the cargo length area, comprising of the structural items.

2. Only the deck plating strakes outside the line of openings are to be recorded.

3. The topside area comprises deck plating, stringer plate and sheerstrake (including rounded gunwales).

4. The exact frame station of measurement is to be stated.

5. The single measurements recorded are to represent the average of multiple measurements.

6. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules), the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

Z7
(cont'd)

TM2-G(NSD) (ii) Report on THICKNESS MEASUREMENT OF SHELL PLATING (one, two or three transverse sections)

Sheet 6

Ship's name..... Class Identity No. ..... Report No. .....

SHELL PLATING																																
	FIRST TRANSVERSE SECTION AT FRAME NUMBER										SECOND TRANSVERSE SECTION AT FRAME NUMBER										THIRD TRANSVERSE SECTION AT FRAME NUMBER									
STRAKE POSITION	No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				No. or Letter	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)			
					P	S	P		S						P	S	P		S						P	S	P		S	
1st below sheer strake																														
2nd																														
3rd																														
4th																														
5th																														
6th																														
7th																														
8th																														
9th																														
10th																														
11th																														
12th																														
13th																														
14th																														
15th																														
16th																														
17th																														
18th																														
19th																														
20th																														
Keel strake																														
BOTTOM TOTAL																														

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM2-G(NSD) (ii)

1. This report may be used for recording the thickness measurement of:-

   Shell plating transverse sections:-

   One, two or three sections within cargo length area comprising of the structural items.

2. The bottom area comprises keel, bottom and bilge plating.

3. The exact frame station of measurement is to be stated.

4. The single measurements recorded are to represent the average of multiple measurements.

5. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules), the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

Z7
(cont'd)

TM3-G(NSD) Report on THICKNESS MEASUREMENT OF LONGITUDINAL MEMBERS (one, two or three transverse sections)

Sheet 7

Ship's name..... Class Identity No. ..... Report No. .....

	FIRST TRANSVERSE SECTION AT FRAME NUMBER										SECOND TRANSVERSE SECTION AT FRAME NUMBER										THIRD TRANSVERSE SECTION AT FRAME NUMBER									
STRUCTURAL MEMBER	Item No.	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				Item No.	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)				Item No.	As Built Thk. mm	Vol. Thk. Add. mm	Ren. Thk. mm (a)	Gauged Thk. mm (b)		Remaining Corr. Addition, mm (b)-(a)			
					P	S	P		S						P	S	P		S						P	S	P		S	

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM3-G(NSD)

1. This report may be used for recording the thickness measurement of:-

   Longitudinal Members at transverse sections:-

   One, two, or three sections within the cargo length area, comprising of the appropriate structural items.

2. The exact frame station of measurement is to be stated.

3. The single measurements recorded are to represent the average of multiple measurements.

4. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules), the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

Z7
(cont'd)

TM4-G(NSD) Report on THICKNESS MEASUREMENTS OF TRANSVERSE BULKHEADS

Sheet 8

Ship's name..... Class Identity No. ..... Report No. .....

LOCATION OF STRUCTURE: FRAME NO.:

STRUCTURAL COMPONENT (PLATING/STIFFENER)

STRUCTURAL COMPONENT (PLATING/STIFFENER)	As Built Thickness mm	Voluntary Thickness Addition mm	Renewal Thickness mm (a)	Gauged Thickness mm (b)		Remaining Corr. Addition mm (b)-(a)			
				P	S	P		S	

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM4-G(NSD)

1. This report form may be used for recording the thickness measurement of cargo hold transverse bulkheads.

2. The single measurements recorded are to represent the average of multiple measurements.

3. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules), the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

Z7
(cont'd)

TM5-G(NSD) Report on THICKNESS MEASUREMENT OF MISCELLANEOUS STRUCTURAL MEMBERS

Sheet 9

Ship's name..... Class Identity No. ..... Report No. .....

STRUCTURAL COMPONENT										SKETCH
LOCATION OF STRUCTURE:										
Description	As Built Thk. mm	Voluntary Thickness Addition mm	Renewal Thickness mm (a)	Gauged Thickness mm (b)		Remaining Corr. Addition mm (b)-(a)				
				P	S	P		S		

Operators Signature..... NOTES – See Reverse

Z7
(cont'd)

NOTES TO REPORT TM5-G(NSD)

1. This report may be used for recording the thickness measurement of miscellaneous structural members.

2. The single measurements recorded are to represent the average of multiple measurements.

3. The remaining corrosion addition is to be recorded with result of gauged thickness minus renewal thickness. If the result is negative, the structure in way shall be renewed, and the mark "R" is to be indicated in the right-hand column. If the result is between 0 and substantial corrosion allowable limits (according to the individual classification Society's Rules), the structure in way shall be additional gauged, and the mark "S" is to be indicated in the right-hand column.

End of Document