

**CLASS ANNUAL SURVEY/INTERMEDIATE SURVEY/SPECIAL SURVEY/  
GENERAL EXAMINATION\* CHECKLIST FOR CHEMICAL TANKER**

**Ship Name:** ..... **Report No.:** ..... **I.R. No.:** .....

<b>DOCUMENTATION</b>
<b>STATUTORY CERTIFICATES</b> Valid Statutory certificates available on board.
<b>APPROVED TRIM &amp; STABILITY INFORMATION</b> Confirmation of availability of trim and stability booklet approved by administration.
<b>MANOEUVRING BOOKLET</b> Confirmation that the manoeuvring booklet is on board and that the manoeuvring information is displayed on the navigating bridge.
<b>FIRE CONTROL PLANS</b> Verification of proper posting of fire control plans (including duplicate sets permanently stored in a prominently marked weathertight enclosures outside deckhouse.
<b>STEERING GEAR ENTRIES REQUIRED BY SOLAS/FLAG</b> Verification of entries made in the ship's log for departure steering checks & Emergency steering drills.
<b>DAMAGE STABILITY</b> Availability of damage stability information.
<b>LOADING MANUAL</b> Verification that vessel has an approved Loading Manual.
<b>I.G. SYSTEM OPERATIONAL MANUAL</b> Verification for availability of I.G. Instruction manual (operation, maintenance, safety, health hazard etc.)
<b>DAMAGE CONTROL PLANS &amp; BOOKLET</b> Verification that damage control plan and booklet are available. (Note: Applicable for vessels of 500 GT and over, keel laid on or after 01/01/2009.)
<b>ESP DOCUMENT</b> Availability of ESP documents on board
<b>THE SHIP STRUCTURE ACCESS MANUAL</b> Checking the Ship Structure Access Manual. (Note: Applicable for 500 GT and over, constructed on or after 1 <sup>st</sup> Jan. 2006)
<b>CONSTRUCTION DRAWINGS MAINTAINED ON BOARD</b> Confirmation that structural alterations performed, if any, have been approved by the classification society and reported on the as-built drawings kept on board. (Note: applicable for ship constructed on or after 1 <sup>st</sup> Jan. 2007)
<b>DOCUMENT OF APPROVAL FOR STABILITY INSTRUMENT</b> Confirmation vessel is provided with DOA for stability instrument. (Note: Applicable for new vessel keel laid on or after 01/01/2016 and existing vessel first renewal survey on or after 01/01/2016)
<b>NATIONAL REQUIREMENTS/CODE</b> Availability of applicable code (Note: (IBC-for ships whose keel was laid on or after 01-06-1986/BCH Code for ships built before 01-06-1986 but after 31-12-1976) or National Requirements and Material Safety Data sheets for the carriage of cargoes.)
<b>P &amp; A MANUAL</b> Verification that vessel has an approved P & A Manual.

**Condition to be reported using number code as follows:**

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**EMERGENCY TOWING PROCEDURES**

Confirmation that ship specific emergency towing procedures available on board.

**COATING TECHNICAL FILE**

Confirm that Coating technical file is available on board and maintained.

(Note: Applicable for ships of not less than 500 gross tonnage provided with dedicated seawater ballast tanks for which the building contract is placed on or after 01/07/2008 or the keels of which are laid on or after 01/01/2009 or which are delivered on or after 01/07/2012.)

**SHIP CONSTRUCTION FILE**

Confirmation that Ship Construction File is on board.

**CARGO INFORMATION**

Confirmation that table giving the filling ratio for cargo tank at various densities provided and information related to the chemical and physical properties of the product provided including provision for measure taken in an accident.

**CARGO TRANSFER PROCEDURE MANUAL**

Confirmation that manual covering procedure for cargo transfer, tank, cleaning, gas freeing and also compatibility information as to material of construction, protective lining and coating is provided.

**ALTERNATIVE DESIGN & ARRANGEMENT**

Confirmation that where applicable, the approved documentation for alternative design and arrangement is on board.

**CARGO RECORD BOOK**

Confirmation that Cargo Record Book is on board.

**HARMONIC DISTORTION RECORD FOR VESSEL FITTED WITH HARMONIC FILTER.**

Verification of annual measurement record of harmonic distortion level at bus bar (Applicable for vessel keel laid before 1 July 2017 and for any modification on electrical distribution system on existing vessel, total distortion measured along with equipment running at the time of measurement to be recorded)

**OPERATIONAL MANUAL FOR EFFECT OF HARMONIC FILTER**

Verification that following document are available on board.

- 1) Effect of failure on harmonic filter on electrical distribution system.
- 2) Permitted modes of operation for maintaining harmonic distortion level within acceptable limit during normal operation and during failure of filter.
- 3) Approved copy of relaxation on allowable distortion limit, if any
- 4) Record of harmonic distortion level measured.

(Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)

**CLASS CERTIFICATE**

Confirmation that the survey/general examination\* completed satisfactorily and Certificate extended/Full-Term certificate issued/Full-Term Certificate endorsed/interim certificate issued/short term certificate issued.\*

**HULL AND WEATHER DECK****ACCOMMODATION, SERVICE, MACHINERY SPACES & WHEELHOUSES**

Verification gas tight condition of wheelhouse doors and windows, fixed type side scuttles and windows in superstructure and deckhouse ends facing the cargo area and containing accommodation, service, machinery and control spaces and gas tight bulkhead penetrations.

**SEPERATION FROM ACCOMODATION, SERVICE SPACE**

Confirmation that tanks containing cargo or residues of cargo are suitably segregated from accommodation, service and machinery spaces and from drinking water and stores for human consumption, that cargo piping does not pass through any accommodation, service or machinery space other than cargo pump rooms or pump rooms and cargoes are not carried in either the fore or the aft peak tank

**SPACE NOT NORMALLY ENTERED**

Confirmation that double bottoms, cofferdams, duct keels, pipe tunnels, hold spaces and other spaces where cargo may accumulate are capable of being efficiently ventilated to ensure a safe environment when entry into the space is necessary and that, when appropriate, permanent ducting is provided and any ventilation fans comply with non-sparking construction in hazardous locations.

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**VENTILATION OF SPACE IN THE CARGO AREA NORMALLY ENTERED DURING CARGO OPERATION**

Examination of arrangement of mechanical ventilation of space for satisfactory condition and verification that it is controlled from outside space, Warning notice placed, if it is the extraction type, with extraction from below the floor plates, unless the space houses electrical motor driving cargo pumps when it should be of the positive pressure type. The ducting does not pass through accommodation, machinery and service space and that exhaust duct are clear of the ventilation inlet and opening to such space.

**CARGO TANK OPENINGS**

Examination of cargo tank openings including gaskets, covers, coamings and flame screens.

**BUNKER TANKS**

Examination of flame screens on vents to all bunker tanks.

**CARGO & PROCESS PIPING AND FITTINGS**

Verification for condition of cargo, bunker, ballast and vent piping system including vent masts and headers and devices to prevent the passage of flame on vents to all bunker, oily-ballast and oily-slop tanks and void spaces, as far as practicable. Examination of associated expansion arrangements and identification/markings on cargo and process piping and valves. The verification to include condition of removable pipe lengths/other approved equipment necessary for cargo operation.

**CARGO TRANSFER ARRANGEMENTS**

Examination of the cargo transfer arrangements and confirmation that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing

**CARGO TANK VENTING ARRANGEMENT**

Verification of cargo tank venting arrangements. Where controlled tank venting system is employed such verification to include pressure/vacuum valves, mast raisers, devices to prevent passage of flames into the cargo tanks and cargo tanks gas freeing arrangements (on ships constructed on or after 01-07-2002 the controlled venting system should consist of a primary and a secondary means). Confirmation that suitable provision is made for drainage of vent lines and that no shut-off valves or other means of stoppage, including spectacle or blank flanges, are fitted either to the individual vents or to the header, if the vents are combined or either above or below pressure/vacuum relief valves with closed vent systems.

**EMERGENCY TOWING ARRANGEMENT**

Examining the towing arrangements and verification of operational readiness.

**FIRE DOORS AND CONTROLS**

a. Examination of manual/automatic fire doors, verification of their satisfactory operation and confirmation that no holding back arrangements exist and arrangements for self-closing & locking are in order.

b. Confirmation that fire doors provided between machinery space and steering gear compartment are of gastight, self-closing type and without any hold back arrangements.

(Note: applicable where emergency fire pump is in steering gear compartment)

**ANCHORING & MOORING EQUIPMENT**

Examining the anchoring equipment & mooring equipment. At renewal survey, during the examination, anchors are lowered and raised using the windlass.

**SOUNDING PIPES**

Sounding pipes, including self-closing devices on short sounding pipes.

**HATCHWAYS**

Examination and testing of hatchways on freeboard and superstructure decks including efficient condition of closing appliances.

**TIGHTNESS TESTING OF CLOSING APPLIANCES**

Where tightness testing of closing appliances such as hatches, doors, etc. is carried out with ultrasonic equipment, confirmation that firm engaged in tightness testing is approved.

Name of the firm:.....

IRS approval certificate Number..... Validity.....

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

<p><b>THICKNESS MEASUREMENT</b></p> <p>Where thickness measurements on structure/plating of the vessel is carried out, confirmation that firm engaged in thickness measurement on vessel is approved.</p> <p>Name of the firm:.....</p> <p>IRS approval certificate Number.....Validity.....</p>
<p><b>REMOTE INSPECTION TECHNIQUES (RIT)</b></p> <p>Where remote inspection techniques are used in survey, confirmation that firm engaged for RIT is approved.</p> <p>Name of the firm:.....</p> <p>IRS approval certificate Number.....Validity.....</p>
<p><b>NON-DESTRUCTIVE TESTING (NDT)</b></p> <p>Where NDT carried out onboard, confirmation that the firm providing NDT services is approved.</p> <p>Name of the firm:.....</p> <p>IRS approval certificate Number.....Validity.....</p>
<p><b>WEATHER DECKS</b></p> <p>Examination of weather decks, ships side plating above waterline.</p>
<p><b>HULL MARKINGS</b></p> <p>Verification that hull markings such as freeboard markings, draft markings, vessel name, IMO number, port of registry are legible and in satisfactory condition.</p>
<p><b>VENTILATORS</b></p> <p>Examination and or testing of ventilators including efficiency of their closing appliances.</p>
<p><b>WINDOWS, SIDE SCUTTLES AND DEAD LIGHTS</b></p> <p>Examination and or testing of windows, side scuttles and dead lights, flush deck scuttles, ash shoots &amp; other openings.</p>
<p><b>SCUPPERS, SANITARY DISCHARGES, VALVES AND CONTROLS</b></p> <p>Examination scuppers and sanitary discharges and valves together with valves and their control gear.</p>
<p><b>SKYLIGHTS AND FIDDLEY OPENINGS</b></p> <p>Examination and or testing of skylights and fiddley openings including their closing appliances.</p>
<p><b>EXPOSED CASINGS,DECK HOUSES, COMPANION WAYS AND SUPERSTRUCTURES</b></p> <p>Examination and/testing of exposed casings, deck houses, companionways and superstructure bulkheads including closing appliances, openings on freeboard &amp; superstructure decks.</p>
<p><b>GUARD RAILS AND/OR BULWARKS</b></p> <p>Examination of the condition and arrangement.</p>
<p><b>COLLISION &amp; WT BULKHEAD OPENINGS</b></p> <p>Examining the collision and the other watertight bulkheads as far as can be seen. Watertight bulkheads penetrations examination as far as practicable for satisfactory condition.</p>
<p><b>MASTS AND STANDING RIGGING</b></p> <p>Masts, Derricks &amp; Crane columns including their standing rigging.</p>
<p><b>AIR PIPES</b></p> <p>Examination and or testing of air pipes including efficiency of their closing appliances, weld connection between Air pipes and deck plating.</p> <p>Examining and confirming that vents from bunker tanks and ballast tanks (with cathodic protection) are equipped with flame screens and mesh provided are in satisfactory condition..</p>
<p><b>SAFE ACCESS TO BOW</b></p> <p>Examining arrangements of safe access to bow including trends, side stringer cross members, decking, deck plate, stanchion, rigid hand rails, hand ropes, support points, shelter and confirmation that it is constructed of fire resistant and nonslip material.</p>
<p><b>BOW AND STERN LOADING</b></p> <p>Confirmation, when applicable Bow or Stern loading and unloading arrangement in order and testing of means of communication and remote shut down for cargo pump in satisfactory condition.</p>

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**GANGWAYS, LIFELINES AND MEANS OF EMBARKATION/DISEMARKATION**

a. Satisfactory examination of items pertaining to accommodation ladder, gangways, Davits, Winches for their satisfactory condition. Verification of inspection and maintenance records.

b. Confirmation that embarkation ladder and accommodation ladder including safety net are in satisfactory condition and marked with safe working load.

**TOWING AND MOORING EQUIPMENT**

Confirmation that the towing and mooring equipment is properly marked with any restriction associated with its safe operation for ships constructed after 01/01/2007

**NEW INSTALLATION OF MATERIALS CONTAINING ASBESTOS**

Confirmation that new equipment containing asbestos was not fitted on board since last survey.

**ACCESS TO AND WITHIN SPACES IN AND OF THE FORWARD CARGO AREA**

Verification of the permanent means of access where appropriate of the internal spaces as far as practicable.

**UPGRADATION/REPAIR TO COATING**

Confirmation that maintenance, repair and partial recoating had been done as per manufacturer's specification using acceptable coating system, suitable surface preparation and adequate film thickness under the supervision of coating manufacturer's representative/coating inspector. These had been verified through stage/patrol inspection during survey and considered acceptable.

(Note: Ballast tank for which coating condition was upgraded to "GOOD" this time during survey are to be listed in the "Remark" section.)

**WATERTIGHT CABLE TRANSIT SEAL SYSTEMS**

(Note: Applicable for all vessels contracted for construction on or after 1<sup>st</sup> July 2021)

i) Review of the cable transit seal systems register to confirm that it being maintained.

ii) Confirmation that where any disruption to the cable transits or installation of new cable transits carried out onboard from last annual survey, records are reviewed for the satisfactory condition of those transits.

(Note: If deemed necessary examination of such transits to be undertaken)

iii) Examination of cable transits as far as practicable for their satisfactory condition.

iv) Confirmation that the results of survey are recorded in the cable transit seal system register.

v) Where the cable transits have been examined by an approved service supplier, review of the cable transit seal system register to confirm that it has been properly maintained by the owner and correctly endorsed by the service supplier.

**FREEING PORTS**

Examination of the condition and arrangement including shutters and crew protection bars

**MAINTENANCE, REPAIR AND PARTIAL COATING OF DEDICATED BALLAST TANKS**

Confirming that maintenance, repair and partial coating of dedicated ballast tanks, as appropriate, are recorded in the coating technical file and the maintenance of the protective coating is included in the overall ship's maintenance scheme.

**LOADING INSTRUMENT**

Availability of an approved loading instrument together with it's operational manual and verification of test cases.

[Capable of verifying compliance with intact and damage stability requirement, for new vessel keel laid on or after 01/01/2016 and existing vessel first renewal survey on or after 01/01/2016]

**MACHINERY SPACES****MACHINERY AND BOILER SPACES**

Confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are so installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards.

**FIRE/EXPLOSION HAZARDS**

a. i) Propulsion system and auxiliary machinery, boilers, all pressurized systems (steam, pneumatic, hydraulic) and their associated fittings were examined to see whether they are being properly maintained and with particular attention to the fire and explosion hazards.

ii) Verification that oil/water leakages, accumulation of oil, with potential source of ignition does not exist in the machinery spaces. Leakages if any have been dealt and source of leakages rectified.

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

iii) Confirmation that floor plates & gratings are secured and found to be in order.
b. Confirmation that lagging material on hot surfaces, anti-splash tapes on joints are in place as required and high-pressure fuel lines are jacketed and spray shields flanged/screwed joints of pipes are in satisfactory condition.
c. Confirmation that arrangement for high pressure fuel oil leak off alarm for propulsion engine, auxiliary engines or any other diesel engines are satisfactory and operational. Drain lines are connected to alarm unit and working satisfactory.
d. Where flexible hoses/pipes are used, examination of hoses/pipes for any signs of material cracking or deterioration to ensure that, there is no damage, cut, kinked, crushed, twisted, hardened, cracked hoses/pipes exists in the oil systems.
e. Confirmation that the supports and retaining devices of low-pressure fuel system provides adequate restraint and are in satisfactory condition.
<b>STEERING GEAR</b> a. All main and auxiliary steering arrangements and their associated equipment and control systems were examined and tested. Steering chains were verified for wear and tear and it was ensured wear is within 12% of the original rule diameter. Confirmation that various alarms required for hydraulic power operated, electric and electro-hydraulic steering gears are, operating satisfactorily and that the recharging arrangements for hydraulic power operated steering gears are being maintained. Log entries made in accordance with statutory requirements were verified where applicable. Confirm the requisite arrangements to regain steering capability in the event of the prescribed single failure are being maintained. Confirm, that the required arrangement to regain steering capability in the event of the prescribed single failure is maintained.
b. Confirmation that steering gear compartment is in satisfactory condition and provided with handrail arrangements, grating or non-slip surface.
<b>MEANS OF COMMUNICATION</b> All means of communication between the navigating bridge and the machinery control positions including engine room telegraph, as well as the bridge and the main/alternative steering position, if fitted, are tested. Where ships having emergency steering positions there are means of relaying heading information and, when appropriate, supplying visual compass readings to the emergency steering positions. Confirmation that means of indicating the angular position of the rudder is operational.
<b>BOILERS AND PRESSURE VESSELS</b> Periodical Surveys of boilers and other pressure vessels have been carried out as required by the Rules and the safety devices have been tested. External visual examination. External examination of boilers including test of safety & protective devices and test of safety valve using it's relieving gear. For exhaust gas economisers, review of engine log book to verify that Chief Engineer has tested the safety valves at sea within the window period of Annual Survey.
<b>REMOTE CONTROLS</b> Examining the means for the operation of the main and auxiliary machinery essential for propulsion and the safety of the ship, including when applicable, the means of remotely controlling the propulsion machinery from the navigating bridge (including the control, monitoring, reporting, alert and safety actions) and the arrangements to operate the main and other machinery from a machinery control room
<b>PROPULSION MACHINERY</b> Confirmation that normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative.
<b>SEA WATER PIPE EXPANSION JOINTS</b> Examining visually the condition of any expansion joints in sea water system.
<b>BILGE PUMPING ARRANGEMENT</b> Examination of the bilge pumping systems and bilge wells including operation of each bilge pump (including hand pumps and eductors), extended spindles and level alarms, where fitted. Operational confirmation of emergency bilge suction and bilge-pumping system for each watertight compartment and drainage from enclosed cargo spaces situated on freeboard deck.
<b>FIRST START ARRANGEMENT</b> Operational confirmation of the means provided to bring the machinery into operation from the dead ship condition without external aid.

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

<p><b>AUTOMATION</b></p> <p>General Examination of automation equipment. Operation of safety devices, bilge level detection and alarm systems and control systems. Examination and testing of the general emergency alarm system and confirmation of the engineer's alarm that it is clearly audible in the engineer's accommodation</p>
<p><b>SCHEDULE OF BATTERIES</b></p> <p>Schedule of batteries for essential and emergency services available on board and maintenance being done as per this schedule.</p>
<p><b>MACHINERY SPACE VENTILLATION</b></p> <p>Confirmation that machinery space ventilation is in good working condition.</p>
<p><b>EMERGENCY GENERATOR ROOM VENTILATORS ARRANGEMENT</b></p> <p>Verification that following requirement of emergency generator room ventilation louvers and its closing appliance examined/tested and found satisfactory.</p> <ol style="list-style-type: none"> <li>Manual or power operation of louvers and its closing appliance.</li> <li>Operating instruction, where hand –operated system is in use</li> <li>Automatic opening of ventilation louvers whenever emergency generator starting/in operation for power operated system where provided including fail to open operation.</li> <li>Manual closing operation from outside the space, where open/closed indication clearly marked.</li> </ol> <p>(Note: Applicable for vessel keel laid on or after 01 January 2017)</p>
<p><b>MACHINERY VERIFICATION RUNS</b></p> <p>Towards completion of Special/Continuous Survey of Machinery, trial of main &amp; auxiliary machinery including the steering gear &amp; controls carried out to confirm satisfactory operation (In afloat condition).</p>
<p><b>SEA TRIAL</b></p> <p>In case of major repairs to main propulsion machinery or steering gear, confirmation that a sea trial has been carried out satisfactorily to confirm proper operation of the relevant machinery in all respects.</p> <p>(Note: With effect from 1<sup>st</sup> July 2018, in case of major repairs to main propulsion machinery or steering gear, the scope of sea trial is to also include a test plan for astern response characteristics based on those required for such an equipment or system when fitted to the new ship. The tests are to be carried out at least over the manoeuvring range of the propulsion system and from all control positions. A test plan is to be provided by the manufacturer and accepted by the surveyor. If specific operational characteristics have been defined by the manufacturer, same is to be included in the test plan and the reversing characteristics of the propulsion plant, including the blade pitch control system of controllable pitch propellers, are to be demonstrated and recorded during trials.)</p>
<p><b>ELECTRICAL INSTALLATION</b></p>
<p><b>EMERGENCY SOURCE OF POWER</b></p> <p>The operation of the emergency source(s) of electrical power, including their starting arrangement, the systems supplied, and when appropriate, their automatic operation as far as practicable, verification that all electrical equipments in dangerous zones is suitable for such locations, is in good condition and properly maintained. Emergency lights in good working condition.</p>
<p><b>ELECTRICAL SYSTEM</b></p> <ol style="list-style-type: none"> <li>General examination visually and in operation, as feasible, of the main electrical machinery, the emergency sources of electrical power, the switch gear, other electrical equipment including the lighting system. The precautions provided against shock, fire and other hazards of electrical origin for proper maintenance</li> </ol>
<p>b. Confirmation that light covers including emergency lights are in satisfactory condition.</p>
<p>c. Confirmation that 440 V/220 V panels are not showing low insulation resistance.</p>
<p>d. Confirmation that insulation mat is provided around the electrical switch board, panels.</p>
<p><b>ELECTRICAL INSTALLATION AND ARRANGEMENT</b></p> <p>Confirmation that electrical equipment and cables in dangerous spaces and zones are suitable for such locations and in satisfactory condition and properly maintained. The electric motors driving ventilation fans are positioned outside ventilation duct when carriage of flammable product is intended and the ducts, in way of fans only, are of non sparking construction in dangerous zone.</p>

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- Repairs now recommended and remain outstanding.
- Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**INSULATION RESISTANCE**

Verification of insulation resistance of electrical equipment and cables in the dangerous zones and space (immediate past records may be accepted when the ship is not in a gas free state) where applicable, the Pipelines and Independent cargo tanks are Electrically bonded to Hull.

**INTRINSICALLY SAFE SYSTEMS AND CIRCUITS**

Confirmation that intrinsically safe systems and circuits used for measurement, monitoring, control and communication purpose in all hazardous location are properly maintained.

**MONITORING OF HARMONIC DISTORTION**

Confirmation that equipment for continuous monitoring of harmonic distortion level is in good order, alarm tested, logging of measured value verified in engine log book or electronically in case where automation system fitted and found to satisfactory. (Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)

**PROTECTION ARRANGEMENT FOR HARMONIC FILTER**

Confirmation that protection for harmonic filter, including alarm tested and found satisfactory. (Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)

**ADDITIONAL REQUIREMENTS FOR IMPRESSED CURRENT CATHODIC PROTECTION (ICCP) SYSTEMS****DOCUMENTATION AND RECORDS**

1. Confirmation that ICCP Manual is available onboard and attachments details of anodes and reference electrodes along with specification of connecting cables are available for reference.
2. Confirmation that record of system operation is maintained and downtime if any is recorded. Confirmation that all anode current outputs and potentials monitored are similar to those settled during previous assessment.
3. Confirmation from records that ICCP system is maintained and adjusted by the supplier on regular basis as per manufacturer's instructions.

**SYSTEM OPERATION**

Confirmation that system is in operation and working satisfactory. Confirmation that operation of indicators and control on the panel including auto/manual switch are found to be satisfactory.

**PROTECTION ARRANGEMENT FOR ANODE CABLES**

Confirmation that protection arrangement for ICCP anode cables is in satisfactory condition.

**ALTERNATIVE DESIGN AND ARRANGEMENT**

Where applicable, examination of alternative design and arrangement for machinery or electrical installations, low-flashpoint fuel storage and distribution systems, or fire safety, in accordance with the test inspection and maintenance requirements if any specified in the approved documentation is to be carried out.

**FIREFIGHTING/PROTECTION ARRANGEMENTS****SERVICING OF FIREFIGHTING APPLIANCES**

Verification of evidences for proper maintenance and servicing of firefighting appliances.

No.	Item	Inspection Type	Date Last Done
1	Breathing apparatus	Examination	
		Testing	
2	Portable/Semi-portable Fire Extinguishers	Examination	
		Testing	
3	Fixed Fire Extinguishing System (CO <sub>2</sub> /Halon/Foam/DCP/Other* (specify).....)	CO <sub>2</sub>	
		Weighment	
		5 Yearly servicing	
		10 Yearly servicing	
		Testing	
		Examination	

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.



	Halon	Container Verified	
		Servicing	
		Container Pressure Testing	
		Examination	
	Foam	Sample Testing	
		Examination	
	DCP	Testing	
		Examination	
	Other (Specify).....	Testing	
		Examination	
4	Fireman's outfit	Examination	
5	International Shore Coupling	Examination	

**MAIN AND EMERGENCY FIRE PUMP**

a. Verification that each main fire pump (including starting and/or priming arrangements) is capable of producing the required two jets of water simultaneously (whilst also permitting the simultaneous operation of foam system on tankers) whilst the required pressure is maintained in the fire main.

b. Confirmation that emergency fire pump including prime mover and priming arrangements, gauges are in satisfactory condition and pump is building required water pressure and two jets of water simultaneously.

Tested pressure :.....bar

**FIXED CARBON DIOXIDE FIRE-EXTINGUISHING SYSTEMS**

Examination of the fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space.

**FIRE PROTECTION ARRANGEMENTS**

Examination of the fire protection arrangements in cargo spaces and confirming, as far as practicable and as appropriate, the operation of the means of control provided for closing the various openings.

**FIREMAINS, HYDRANTS, HOSES, NOZZLES AND APPLICATORS**

Condition of fire main (no soft patches or doublers) together with flanges and valves, hydrants, hoses, nozzles, applicators, spanners, relief valves and international shore connection.

**READINESS OF FIRE HYDRANTS, HOSES**

Each hose complete with couplings, nozzle (dual-purpose nozzles where applicable) and tools kept ready for use.

**PORTABLE EXTINGUISHERS AND FOAM APPLICATORS**

Confirmation that portable fire extinguishers correspond to the fire control plan w.r.t. Number, type and location and that when examined were in good condition, fully charged and ready for use, confirming the condition of portable fire fighting equipment for the cargoes to be carried in the cargo area is satisfactory.

**SPARE CHARGES**

Availability of spare charge/s for each portable extinguisher or additional portable extinguishers of the same type

**FIRE AND/OR SMOKE DETECTION SYSTEM**

a. Examine for proper functioning and possible testing, any fire detection and alarm system and any sample extraction smoke detection system

b. Confirmation that maintenance as recommended by manufacturer has been undertaken and spares available as per manufacturer's instructions for the system.

**Condition to be reported using number code as follows:**

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**DECK FOAM SYSTEM & CARGO PUMPROOM PROTECTION**

Verification that fixed fire fighting system for cargo pump room, that the deck foam system and deck sprinkler system are in good operating condition and means of operation marked. Check for adequate supply of Foam concentrate, testing that minimum number of jets of water at the required pressure in the fire main is obtained when the system is in operation. Examination of deck foam system for cargo area.

**FIXED FIRE FIGHTING SYSTEM**

i) Examination of fire fighting system (including fixed fire fighting system for the machinery spaces) controls, piping, instructions and marking. Checking for evidence of proper maintenance and servicing including date of last systems tests, Fixed fire fighting system for cargo pump room.

ii) Verification with regard to correct positioning (for in service condition) of safety pins where used on cylinder head discharge valves for fixed fire fighting CO2 system are in accordance with manufacture's instruction manual.

**REMOTE STOPPING OF FANS, OIL PUMPS, VALVES ETC.**

Verification that the remote controls for stopping fans and machinery in machinery spaces are in working order. Examination of the arrangements for oil fuel, lubricating oil and other flammable oils and testing the remote closing of valves for oil fuel, lubricating oil and other flammable oils and , the operation of the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils.

b. Confirmation that quick closing valves are in satisfactory condition and no valve is isolated/disconnected and operating instructions are displayed.

**CLOSING ARRANGEMENTS FOR SKYLIGHTS, FLAPS ETC**

Examination of closing arrangements of ventilators, funnel annular spaces, skylights, doorways and tunnel where applicable, including condition of operating mechanism eg: wire ropes, hydraulic piping etc.

**FIRE EXTINGUISHER FOR PAINT STAGE/FLAMMABLE LOCKES**

Examination of the fire extinguishing systems for spaces containing paint and/or flammable liquids and deep fat cooking equipment in accommodation and service spaces, examination of fire safety requirements of any helicopter facilities.

**GASEOUS FUEL FOR DOMESTIC PURPOSE**

Examining the arrangements for gaseous fuel for domestic purposes.

**FIREMAN'S OUTFITS**

Confirmation that the fire fighters' outfits including its self-contained compressed air breathing apparatus and emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe.

**FIRE DAMPERS AND VENTILATION SYSTEMS**

Testing the fire dampers of ventilation ducts and the means of closing the main inlets and outlets of all ventilations systems and testing the means of stopping power ventilation systems from outside the space served.

**MEANS OF ESCAPE**

a. Confirmation that the means of escape from accommodation, machinery and other spaces are satisfactory.

b. Confirmation that opening of escape doors are in the way of direction of escape, handrails are provided in the corridors that are being used as escape routes and none of the doors along any designated escape routes require keys to unlock them when moving in the direction of escape.

**POTENTIAL SOURCES OF IGNITION**

Confirmation that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials etc, there are no signs of undue leakage and access ladders are in satisfactory condition.

**CONTINUOUS MONITORING**

Confirmation that the system for continuous monitoring of the concentration of flammable vapours is satisfactory.

**SAMPLING POINTS OR DETECTOR HEADS**

Confirmation that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected.

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

<b>CARGO PUMP ROOM/OTHER CARGO HANDLING SPACES</b>
<b>ACCESS LADDERS AND RESCUE ARRANGEMENTS</b> Verification of cargo pump room access ladders, railings and permanent rescue arrangements.
<b>CARGO PUMP ROOM VENTILATION, CLEANLINESS Etc</b> Examination of cargo pump room(s) spaces for freeness from potential sources of ignition; operation of the ventilation system (damper operation and flame screens) including interlocking arrangement to lighting. Verification that no oil leakages and no accumulation of oil in the cargo pump room. Leakages if any have been dealt and source of leakages rectified.
<b>CARGO PUMP ROOM DRAINAGE ARRANGEMENT</b> Verification of cargo pump room bilge system operable from outside the cargo pump rooms.
<b>PUMP ROOM BULKHEAD AND PIPE TUNNEL IF FITED</b> Examinations of all pump room bulkheads for signs of chemical leakage or fractures, the sealing arrangements of all penetrations of pump room bulkheads. Examination of condition of all piping systems.
<b>CARGO PUMPS, PRESSURE GAUGES, VALVES</b> Examination of cargo, bilge, ballast, stripping pumps for excessive gland seal leakage. Verification that installed pressure gauges on cargo discharge lines including those fitted outside the cargo pump room and level indicating systems are operational, verification that pumps, valves and pipelines are identified and distinctively marked.
<b>CARGO HANDLING/CARGO CONTROL ROOMS</b>
<b>CARGO TANK GAUGING SYSTEM</b> Verification of cargo tank level gauges, high level alarms and automatic high-liquid-level shut-off system.
<b>LOCATION OF VENTING</b> Examining the location of the vent outlets in respect of the height above the weather deck or the fore and aft gangway, from the nearest air intakes or openings to accommodation, service and machinery spaces and ignition sources are in satisfactory condition.
<b>SAFETY ARRANGEMENTS RELATED TO CARGO</b>
Examinations of gauging devices, high level alarms, valves associated with overflow control. Examination of cargo heating/cooling system sampling arrangements where fitted. Examination of the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and mark with date of testing.
Verification of temperature devices and alarms, removable pipe lengths or other approved equipment necessary for cargo separation. Verification that the ventilation system including portable equipment is operational. Verification that arrangements are made for sufficient inert/padding/drying gas to be carried or generated to compensate for normal losses and that means are provided for monitoring of ullage spaces. Verification that arrangements are made for sufficient medium to be carried where drying agents are used on air inlets to cargo tanks.
Confirmation that the protective clothing for crew engaged in loading and discharging operations and its stowage is in a satisfactory condition.
<b>SAFETY EQUIPMENT &amp; BREATHING APPARATUS</b>
Confirmation that safety equipment and associated breathing apparatus and associated air supplies and, when appropriate, emergency-escape respiratory and eye protection, are in a satisfactory condition and are properly stowed.
<b>PORTABLE GAS DETECTION INSTRUMENTS</b>
Verify that at least two for toxic & flammable, fixed or portable type gas detection instruments are on board and arrangements have been made for the supply of the appropriate vapour detection tubes.
<b>FIRST AID EQUIPMENT</b>
Confirmation that medical first-aid equipment, including stretchers and oxygen resuscitation equipment are in a satisfactory condition.
Confirmation that arrangements have been made for the antidotes for the cargoes actually carried to be on board.
<b>DECONTAMINATION AND EYE WASH ARRANGEMENT</b> Functional verification of decontamination and eye wash arrangements including arrangements against freezing

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**CARGO SAMPLE**

Confirmation that stowage of cargo sample is in satisfactory condition

**GENERAL****HOUSE KEEPING**

- i) Verification that general housekeeping /cleanliness in engine room, pump room, on deck, accommodation, hospital, galley, wash basins and toilets are satisfactory.
- ii) Confirmation that no loose drums and no heavy items without securing/lashing on deck.
- iii) Confirmation that Spare anchor where provided, its lashing bracket in good condition.

**FLAG SPECIFIC REQUIREMENTS**

Confirmation that flag specific requirements/instructions, if any are complied with.  
Please Provide details in Remark section.

**H.O. INSTRUCTIONS**

Confirmation that H.O. Instructions pertaining to this survey if any communicated separately, have been complied with.  
Please Provide details in Remark section.

**ADDITIONAL REQUIREMENTS TOWARDS CLASS INTERMEDIATE SURVEY****CARGO, CARGO WASHING, BUNKER, BALLAST, STEAM AND VENT PIPING**

- i) Examination of cargo, cargo washing, bunker, ballast, steam and vent piping on weather decks as well as vent masts and headers to confirm their satisfactory condition. (If upon examination there is any doubt as to the condition of the piping, the pipe is to be pressure tested, thickness gauged or both. Particular attention is to be paid to any repairs such as welded doublers).
- ii) Where the scope of the intermediate survey is to the same extent as previous special survey, examination of cargo piping on deck, cargo and ballast piping systems within the tanks and spaces and operational testing to working pressure to confirm these are in satisfactory condition.  
(Note: Special attention is to be given to ballast piping in cargo tanks and cargo piping in ballast tanks and void spaces and when the piping, including valves and fittings are open during repair periods, same to be examined internally).

**ELECTRICAL EQUIPMENT IN DANGEROUS ZONES**

Confirmation that general Examination and testing of insulation resistance of electrical circuits in dangerous zones are maintained in satisfactory condition (Note: i) In cases where a proper record of testing is maintained, consideration should be given for accepting recent readings. ii) These measurements are taken when the ship is in a gas free condition and to be carried out within an acceptable time period).

**SAFETY ARRANGEMENTS RELATED TO CARGO**

- 1) Verification that vent line drainage arrangements, cargo heating/cooling system and ship's cargo hoses are (approved) and maintained in efficient condition.
- 2) Verification that where applicable, pipelines and independent cargo tanks are electrically bonded to the hull and maintained in efficient condition.
- 3) Confirmation that spares are provided for cargo area mechanical ventilation fans and are in satisfactory condition.
- 4) Verification that equipment for personal protection is maintained satisfactorily.
- 5) External examination and confirmation that the pumping and piping systems, including stripping system (if fitted) and associated equipment remain as approved and maintained satisfactorily.
- 6) Externally examination of the tank wash piping and confirming that the type, capacity, number and arrangement of the tank washing machines are as approved and maintained satisfactorily.
- 7) Externally examination of the wash water heating system, underwater discharge arrangement and heating system required for solidifying and high viscosity substances (as far as practicable) for satisfactory condition.
- 8) Confirming that the means of controlling the rate of discharge of the residue, flow rate indicating device and ventilation equipment for residue removal is as approved and satisfactory.
- 9) Confirming that cargo tank high level alarms and discharge outlets (if possible) are satisfactory.
- 10) Confirmation from the cargo record book that the pumping and stripping arrangements have been emptying the tanks efficiently and all are in working order.
- 11) Confirming the satisfactory operation of the recording device, as fitted and verifying by an actual flow test that it has an accuracy of  $\pm 15\%$  or better.

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- 3. Repairs now recommended and remain outstanding.
- 4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

**EXAMINATION OF TANKS, SPACES AND THICKNESS MEASUREMENT**

Confirmation that examination of tanks, spaces including testing and thickness measurements are carried out satisfactorily as per the rule requirements and reported separately.

**ADDITIONAL REQUIREMENTS TOWARDS SPECIAL SURVEYS****AIR PIPES**

Internal Examination of Automatic air pipe heads at special survey as required by IRS Rules.

**MOORING ROPES AND TOW LINES**

Confirmation that sufficient mooring ropes and tow lines as required by rules are provided onboard.

**MEANS OF EMBARKATION AND DISEMBARKATION**

Accommodation ladders, gangways and its winches incl. brake system are operationally tested with specified maximum operation load in accordance with IRS Rules.

**CARGO AND BALLAST PIPING SYSTEM**

1) Examination of cargo piping on deck, cargo and ballast piping systems within the tanks and spaces and operational testing to working pressure to confirm these are in satisfactory condition. (Note: Special attention is to be given to ballast piping in cargo tanks and cargo piping in ballast tanks and void spaces and when the piping, including valves and fittings are open during repair periods, same to be examined internally)

2) For chemical tankers exceeding 10 years of age, confirmation that selected steel cargo pipes outside cargo tanks and ballast pipes passing through cargo tanks are thickness measured/internally examined and pressure tested to the maximum working pressure with satisfactory results (Note: Special attention is to be given to cargo/slop discharge piping through ballast tanks and void spaces).

**PRESSURE VACUUM VALVES**

Confirming that pressure vacuum valves connected to cargo tanks are examined in open condition, tested for the setting, and found satisfactory

**EXAMINATION OF TANKS, SPACES AND THICKNESS MEASUREMENT**

Confirmation that internal examination of tanks, spaces including testing and thickness measurements are carried out satisfactorily as per the rule requirements and reported separately.

**WATERTIGHT CABLE TRANSIT SEAL SYSTEMS**

(Note: Applicable for all vessels contracted for construction on or after 1<sup>st</sup> July 2021)

i) Examination of all cable transit seal systems for their satisfactory condition and review of the cable transit seal systems register to confirm that it being maintained.

ii) Confirmation that where any disruption to the cable transits or installation of new cable transits carried out onboard from last special survey, records are reviewed and examination carried out for the satisfactory condition of those transits.

Confirmation that the results are recorded in the Register against each of those cable transits.

(Note: Entries that were reviewed and examined during previous annual survey may be excluded)

iii) Confirmation that the Special Survey is recorded in the Register.

(Note: A single record entry will be sufficient to record the survey of all transits.)

iv) Where the cable transits have been examined by an approved service supplier, review of the cable transit seal system register to confirm that it has been properly maintained by the owner and correctly endorsed by the service supplier.

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3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.