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AMENDMENT RECORD

Version N°	Date of modifications entry into force	Amended Pages	Relation between amended Paragraph.

1. Objectives.

.1 This Procedure is intended to provide the minimum requirements and recommendations to help keep Surveyors in a safe work environment, including the personal protection, when conducting surveys for classification and statutory certification of ships.

2. Application.

.1 This Procedure shall be applied during all surveys carried out on board ships, at the shipyard/repair yards while building, repairing, or converting ships and/or other marine units or parts thereof.

.2 This Procedure shall enter into force forthwith.

3. Scope.

.1 This Procedure shall be applied by Surveyors during all surveys carried out on board ships, at the shipyard/repair yards while building, repairing, or converting ships and/or other marine units or parts thereof, in order to ensure a safe work environment, including the personal protection, especially when the following working conditions are required:

- .1 Entry into confined space.
- .2 Working at heights.
- .3 Use of portable ladders for close-up surveys.
- .4 Use of rafts or boats for survey.
- .5 Pressure testing and working with pressure system.

4. Relevant documentation.

.1 The following documentation is relevant for the control of the Procedure:

- .1 IMO Resolution A.1050-Revised Recommendations for Entering Enclosed Spaces Aboard Ships.
- .2 IMO RO Code, Part II, Section 4.4-Work Environment.

.2 Under permission granted by IACS Procedure, Volume 1: General Procedures, D3.6, Term and Conditions for use the IACS Resolutions, URs, CSR and Technical Information by the Classification Societies which are not members of IACS, the following IACS documents have been used in this Procedure as reference for providing technical requirements:

- .1 Guidelines for the Assessment of Safety Aspect at Workplace.
- .2 Procedural Requirement, PR-37, for Confined Space Safe Entry.
- .3 Recommendation 39 on Safe use of rafts or boats for survey.
- .4 Recommendation 78 on Safe Use of Portable Ladders for Close-up Surveys.
- .5 Recommendation 136 on Working at Heights.
- .6 Recommendation 90 on Ship structure access manual.
- .7 Recommendation 140 on Pressure Testing and Working with Pressure Systems.

5. Responsibilities.

.1 The Marine Division is responsible for providing requirements and recommendations to help keep Surveyors at a safe work environment, including the personal protection, when conducting survey.

.2 The customer, prior to survey commencing, is responsible for providing the environmental conditions under which the survey will be permitted to take place, including any other relevant occupational safety and health legislative requirements in place at locations where surveys are conducted.

.3 The customer, prior to survey commencing, is responsible for identifying all safety risk on board for the inspection of the ship and preparing the ship before any survey job is being made.

.4 The Surveyor is responsible for taking an active role for his own safety and precautions on board ship/in shipyard, and not to continue with the survey if noticing any potential danger which has not been dealt with.

.5 The Surveyor is responsible for ensuring his own training and competency in health and safety requirements in accordance with the provisions of the Section 8 below.

.6 The Surveyor is responsible for providing his own Personal Protective Equipment (PPE) in accordance with the provisions of the Section 9 below, and using during surveys, as required and necessary.

6. Terms and definitions.

.1 **Surveyor**: means any person employed by ICS Class to perform statutory certification and services on behalf of the organization, for example for conducting any classification or statutory survey.

.2 **Personal Protective Equipment (PPE):** refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the Surveyor's body from injury.

.3 **Confined Space:** means a space that has any of the following characteristics:

- Limited openings for entry and exit.
- Unfavourable natural Ventilation.
- Not intended for continuous worker occupancy.

.4 **Competent Person for Confined Spaces:** means a person with sufficient theoretical knowledge and practical experience to make an informed assessment of the likelihood of oxygen deficient/enriched or a dangerous atmosphere being present or subsequently arising in the space. Competent person must be trained and qualified in the hazards of Confined Spaces and in use of atmospheric monitoring devices.

.5 **Responsible Person for Confined Spaces:** means a person authorized to permit entry to a confined space and having sufficient knowledge of the procedure to be followed and other activities that are being undertaken that could impact on the safety of those in a confined space

.6 **Attendant for Confined Spaces:** it is a person who is suitably trained and responsible for maintaining a watch over those entering the confined space, for maintaining communications with those inside the space and for initiating the emergency procedures in the event of an incident occurring.

.7 **Adjacent Space:** an adjacent space is any space bordering the confined space in any directions, including all points of contact, corners, diagonals, decks, tank tops and bulkheads.

.8 **Toxic Product:** means any chemical liquid, gas or solid material, which can give toxic vapours and which is assigned with suffix "T" in column "k" of table given in Chapter 17 of IBC Code, or assigned with suffix "T" or "F+T" in column "f" of table given in Chapter 19 of IGC Code, or classified as a Toxic Substance (Class/Division 6.1) within the part 2 of IMDG Code, or any other product which has a toxic symbol in the data sheet or is hazard classified as a toxic.

.9 **Permit to Enter/Permit to Work:** it is a documented authorization that has been signed and dated, including time of issue by the Responsible Person, which states that the space has been tested by a Competent Person and that the space is safe for entry; what precautions, equipment etc. are required and what works is to be done.

.10 **Work at Height (WAH):** work at height means work in any place where, if precautions are not taken, a person could fall and be injured. This includes working at or below ground level if a fall is still possible such as a fall from an edge or through an opening.

.11 **Competent Person for WAH:** means a person appointed by the facility's (ship / shipyard / workshop / factory) management, who has the required knowledge and experience to assess the risks associated with WAH and is responsible for approving the access arrangements for WAH.

.12 **Responsible person for WAH:** means an authorized representative of the ship owner/manager or facility's management who is authorized to permit WAH.

.13 **Work Restraint Equipment:** it is a system that prevents persons from reaching a point where they can fall. Examples are: Guard rails, scaffolding, tower scaffolds, cherry pickers, scissor lifts.

.14 **Work Positioning Equipment:** it is a system that allows a person who has reached a point of work at height to secure themselves to allow work to take place without the risk of a fall. A work positioning system is a personal fall protection system that enables a Surveyor to work while supported in tension or suspension in such a way that a fall is prevented or restricted. An example would be a boatswain's chair.

.15 **Fall Arrest Equipment:** it is used in situations where a potential to fall cannot be avoided. Equipment used will both arrest the fall and absorb some energy of the fall. Examples would be the traditional harness plus lanyard incorporating energy absorbance, safety nets, air bags.

.16 **Personal Fall Protection System (PFPS):** consist of an anchorage, connectors, and a body belt or body harness and may include a deceleration device, lifeline, or suitable combinations.

.17 **Working Over Sea:** means work taking place outside permanent railings where there is a risk of a Surveyor falling into the sea.

.18 **Pressure Equipment** means vessels, piping, protective devices and pressure accessories used with a relevant fluid or gas and, where applicable, pressure equipment includes attachments relevant to the integrity of the equipment.

.19 **Pressure System:** it is defined as:

- any system comprising of one or more pressure vessels of rigid construction, their associated pipework and protective devices.
- the pipework with its protective devices to which a transportable pressure receptacle is, or is intended to be, connected.
- a pipeline and its protective devices which contain or are liable to contain a relevant fluid or gas, but does not cover transportable pressure receptacles

.20 **Pressurized Tanks and Systems:** mean tanks and systems that are subjected to an applied pressure

.21 **Tests-Pressure Testing:** it involves the application of a stored energy to a part or an assembly of parts in order to verify their strength/integrity (e.g. tightness)/functionality).

.22 **Written Schemes of Examination:** it is a document containing information about selected items of the plant or equipment which form a pressure system, operate under pressure and contain a 'relevant fluid'. A Written Schemes of Examination is required to obtain the Statutory approval of the Pressure System in the case of an industrial application. A Written Schemes of Examination normally covers all protective devices and should include every pressure vessel and those parts of pipelines and pipework which, if they fail, may give rise to danger. The written scheme should specify the nature and frequency of examinations and include any special measures that may be needed to prepare a system for a safe examination.

7. Safety incidents.

.1 The common factors leading to a safety incident include:
- .1 Failure to recognize the hazards, to assess the associated risk and to control it.
- .2 Failure to provide safe processes of work.
- .3 Failure to confirm that safe processes of work are followed.
- .4 Failure to provide safe machinery, equipment and tools.
- .5 Failure to provide safe guards and protection.
- .6 Inadequate information, instructions, training or supervision.
- .7 Failure to follow applicable procedures or instructions, particularly those of manufacturers/suppliers of equipment.
- .8 Failure to avoid situations where attention or reaction is inhibited (e.g. cell phone usage, lack of attention due to exhaustion, medication or personnel distractions).
- .9 Failure to use appropriate safety equipment, including Personal Protective Equipment (PPE), as applicable.
- .10 Failure to ensure good communications.

8. Training of Surveyors.

.1 All Surveyors who are expected to conduct survey on ships and/or at the shipyard/repair yards while building, repairing, or converting ships and/or other marine units or parts thereof, shall be trained in health and safety requirements.

.2 This training should include:
- .1 Recognizing hazards, including those typical hazards that are faced in shipyards.
- .2 Recognizing, evaluating and managing the hazards and the risks associated with them. Specifically, but not limited to: confined spaces, working at heights, pressure system and pressure testing.
- .3 Pressure measuring equipment, its selection (suitable for appropriate pressure rates) and calibration, including remotely located instruments.
- .4 Use of personal protective equipment, including standard PPE and specific PPE.
- .5 Permit to Work (PTW) systems/control procedures at the workplace.
- .6 Requirements for atmosphere testing and the interpretation of their results, including the use of personal multi gas meters.
- .7 Access, exit and safe working requirements.
- .8 Emergency arrangements awareness and degree of participation and enrolment.

.3 The Surveyor is responsible for his own training and competency. Competency in the areas covered by the training identified in 8.2 above, should be periodically updated. The maximum period between these updating should be 3 years with records maintained.

.4 When the Surveyor does not carry out the updating of his competency as required by this Procedure, ICS Class-Marine Division should take immediate corrective and preventive actions prior to Surveyor continuing in those duties which are affected by this situation.

9. Personal Protective Equipment for working.

.1 It is compulsory to ensure the physical integrity of Surveyors by implementing an efficient and effective policy of wearing Personal Protective Equipment (PPE).

.2 The choice of the required PPE relies on risk assessments and local legal requirements. PPE selected should not add to existing risks. Different types and combinations of PPE should be compatible and not undermine each other's effectiveness.

.3 There are different types of PPE depending of the danger and of the potential risks met, depends on the modes of exposure to these dangers.

.4 The Surveyor must always use the necessary personal protective equipment according to the specific conditions and the survey being carried out. The following minimum set of PPEs shall be made available to Surveyors for conducting the surveys:

.1 Safety hard hat-shall always be worn on board.

.2 Safety shoes-with steel toe caps and non-slip soles shall always be worn.

.3 Overall–should be of an easily visible type.

.4 Gloves–prevent slippery type.

.5 Eye protection–goggles should always be used when there is danger of getting solid particles or dust into the eyes. Protection against welding arc flashes and ultraviolet light should also be considered.

.6 Ear protection–ear muffs or ear plugs should be used when long staying noisy areas with over 85db noise level.

.7 Safety belt and line–should be worn where there is a high risk of falling from more than three (3) meters height.

.8 Breathing protection–dust masks shall be used for protection against the breathing of harmful dust, paint spraying and sand blasting.

.9 Protection of the respiratory track–they are needed when the Surveyor is likely to inhale air loaded with pollutants such as gas vapors, aerosols or dusts.

.5 For conducting survey into confined space, and in addition to the PPE specified in 9.4 above, the Surveyor shall use the following protective equipment and tools, as required:

.1 An individual multi gas meter, in good working order, serviced and calibrated as per the manufacturer's instructions. Gas Detectors are necessary during surveys in confined spaces, poorly ventilated zones which might present a risk of presence of toxic gases or explosion.

.2 A flashlight, appropriate to the nature of the confined space to be entered, and in good working order.

10. General requirements for safety for a safe work environment.

.1 The work environmental conditions are not provided by ICS Class. The effective work environment conditions under which the survey will be permitted to take place shall be made clear to the customer prior to survey commencing including any other relevant occupational safety and health legislative requirements in place at locations where surveys are conducted.

.2 The Surveyor, before starting survey work, shall verify that all required safety precautions and conditions have been arranged and personal protective equipment is available for using. The Surveyor shall be familiarized with the use of the required personal protective equipment.

.3 The Surveyor shall verify that required safety measures have been ensured. These safety measures may concern protection against falling (laying out of scaffoldings, guardrails, and nets), protection against the risk of explosion or suffocation (gas freeing, ventilation), protection against shocks or falling objects (wearing protective helmets), etc.

.4 For survey into Cargo Hold and confined space, including tank, a communication system shall be arranged and maintained during the survey between space being examined, the responsible officer on deck and navigation bridge of the ship.

.5 During survey, as required, explosimeter, oxygen-meter, resuscitators, smoke masks, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use are to be made available by the shipowner. A safety check-list shall also be provided.

.6 Adequate and safe lighting shall be provided for conducting a safe and efficient survey.

.7 Spaces (compartments) normally not entered, as cofferdams, pipe tunnels, etc., which has usually no fixed ventilation system, shall be ventilated by portable equipment. The first person entering such a compartment shall use breathing apparatus and a life line suitably attached for emergency rescue. A standby team should be trained for this purpose.

.8 In pump rooms where cargo vapors may occur due to leakages, pump rooms shall be ventilated at least 15 minutes before entering or before pumps are started.

.9 As most cargo vapors are heavier than air, lower explosive limits (LEL) and/or toxic concentration measurements have also to be taken at floor level and below if inspections are necessary in this area.

11. Precautions related to entry into confined space.

11.1 Identifying potential hazards.

.1 Confined space may include, but is not limited to: boilers, pressure vessels, cargo spaces (cargo holds, or cargo tanks), cargo space stairways, ballast tanks, double bottoms, double hull spaces, fuel oil tanks, lube oil tanks, sewage-tanks, pump-rooms, compressor rooms, cofferdams, void spaces, duct keels, inter-barrier spaces, engine crankcases, excavations and pits.

.2 **Oxygen deficiency:** If an empty tank or other confined space has been closed for a time the oxygen content may have been reduced owing to a number of reasons:

- .1 Rusting may have occurred due to oxygen combining with steel.
- .2 Oxygen absorbing chemicals may have been present.
- .3 Oxygen absorbing cargoes may have been carried or gases from volatile cargoes may have displaced the oxygen in tanks.
- .4 Hydrogen may have been produced in a cathodically-protected cargo tank used for ballast.
- .5 Oxygen may have been displaced by the use of carbon dioxide or other fire-extinguishing or preventing media, or inert gas in the tanks or interbarrierspaces of tankers or gas carriers.

.3 **Toxicity of oil cargoes:**
- .1 Hydrocarbon gases are flammable as well as toxic and may be present in fuel or cargo tanks which have contained crude oil or its products.
- .2 Hydrocarbon gases or vapours may also be present in pump rooms and cofferdams, duct keels or other spaces adjacent to cargo tanks due to the leakage of cargo.
- .3 The components in the vapour of some oil cargoes, such as benzene and hydrogen sulphide are very toxic.

.4 **Toxicity of other substances:**
- .1 Cargoes carried in chemical tankers or gas carriers may be toxic.
- .2 There is the possibility of leakage from drums of chemicals or other packages of dangerous goods where there has been mishandling or incorrect stowage or damage due to heavy weather.
- .3 The trace components in inert gas such as carbon monoxide, sulphur dioxide, nitric oxide and nitrogen dioxide are very toxic.
- .4 The interaction of vegetable or animal oils or sewage with sea water may lead to the release of hydrogen sulphide which is very toxic.
- .5 Hydrogen sulphide or other toxic gases may be generated where the residue of grain or similar cargoes permeates into or chokes bilge pumping systems.
- .6 The chemical cleaning, painting or the repair of tank coatings may involve the release of solvent vapours.

.5 **Flammability:**
- .1 Flammable vapours may still be present in cargo or other tanks that have contained oil products or chemical or gas cargoes.
- .2 Cofferdams and other spaces that are adjacent to cargo and other tanks may contain flammable vapours should there have been leakage into the space.

.6 **Other Hazards:**
- .1 Although the inhalation of contaminated air is the most likely route through which harmful substances enter the body, some chemicals can be absorbed through the skin.
- .2 Some of the cargoes carried in chemical tankers and gas carriers are irritant or corrosive if permitted to come into contact with the skin.
- .3 The disturbance of rust, scale or sludge residues of cargoes of animal, vegetable or mineral origin, or of water that could be covering such substances may lead to the release of toxic or flammable gases.

11.2 General safety requirements for entry into confined space.

.1 Each confined space entry shall include:
- .1 Checking and use of personal protective equipment required for entry;
- .2 Checking and use of communication equipment and procedures;
- .3 Checking and use of instruments for measuring the atmosphere in enclosed spaces;
- .4 Checking and use of rescue equipment and procedures; and
- .5 Instructions in first aid and resuscitation techniques.

.2 All Surveyors who are expected to enter and work in confined spaces shall be trained in Occupational Safety and Health requirements for such activities. This training shall include the topics listed in paragraph 8.2 above.

.3 All Surveyors who are expected to enter and work in confined spaces shall meet the following minimum requirements:

.1 Safe entry procedures (such as entry permit, “safe for workers” certificate, “safe for hot work” certificate, etc.) are in place, current and are being followed.

.2 The Responsible and Competent Persons are identified.

.3 The access and exit arrangements to and within the confined space are considered safe. Where available, multiple entry and exit ways shall be opened.

.4 Communications arrangements are adequate.

.5 The confined space is adequately clean to allow safe working. Tanks and spaces to be surveyed must be sufficiently clean and free from water, scale, dirt and oil residues to reveal excessive corrosion, significant deformation, fractures, damages and other structural deterioration.

.6 The confined space lighting is adequate for entry/exit and to allow safe working in a confined space. Whenever possible, natural lighting should be provided in the tank during surveys by opening all tank hatches. Suspended lighting should also be provided to supplement any natural lighting. Each person should carry a torch of the high intensity beam type such as a Wolflite or Halogen light. Torches and lights should be of intrinsically safe design.

.7 The atmosphere has been demonstrated as being safe (safe limits are: atmospheric oxygen the range of 20.6% to 22% by volume, combustible gases less than 5% of lower explosive limit, toxics within acceptable limits). Entry of tanks for survey should not be permitted until testing indicates that the following criteria are met:

a) Gas reading 1% Lower Explosive Limit (LEL) or less (by explosimeter).

b) Maximum Benzene (C_6H_6) 10 ppm (by Draeger Tube or equal).

c) Maximum Hydrogen Sulphide (H_2S) 10 ppm (by Draeger Tube or equal).

d) Minimum Oxygen (0_2) 21% by volume (Oxygen Analyzer).

.8 Adequate ventilation arrangements are in place and functioning. Continuous forced ventilation should be supplied to the tank during the inspection. An adequate number of deck fans should be used to supply this air. The fans should, where possible, be ducted to supply fresh air to the tank bottom. The vent fans should be stopped during atmosphere checks.

.9 Isolation of the confined space, as applicable, from other tanks, cargo spaces, pipes, etc. and of machinery in the space, is confirmed.

.10 Extreme temperature effects are adequately considered. When temperature extremes are expected during a survey, the inspection team should review the procedures that the master or safety officer will follow to monitor the exposure of the team to guard against hypothermia, frostbite, heat fatigue, heat stroke, etc.

.11 Electrical equipment in the confined space is suitable and in acceptable Condition.

.12 A dedicated Attendant is provided by the vessel’s management or the management of the facility where the Surveyor’s activities are carried out for the complete duration of the time spent working in the confined space and the Attendant has suitable means of initiating emergency response.

.13 Adequate emergency response arrangements are in place.

.4 No Surveyor shall be the first to enter a confined space, and they shall be accompanied at all times where the size of the space permits.

.5 Surveyors shall not enter the confined space if they are required to wear breathing apparatus.
.6 Surveyor shall not enter the confined space if the surrounding noise can adversely impact effective communication.
.7 Surveyor shall not enter the confined space if a toxic product is contained in an adjacent space, until the following is carried out:
  .1 A risk assessment is completed by the vessel's Management Company and the risk is mitigated.
  .2 All identified controls are confirmed in place prior to tank entry.
.8 No Surveyor shall be part of a rescue team.
.9 Surveyors shall immediately leave a confined space, by the nearest safe exit, if any alarms sound, or any physical impairment or distress is experienced by the Surveyor.
.10 If any of minimum requirements addressed in 11.4 to 11.10 are not complied with or in any other situation where the Surveyor has a valid concern over the safety of the confined space, he/she shall refuse to enter the confined space.
.11 All Surveyors who are expected to enter and work in confined spaces shall have available a set of Personal Protective Equipment in accordance with Section 9 above, paragraph 9.4. The Surveyor must always use the necessary personal protective equipment according to the specific conditions and the survey being carried out.

12. Precautions related to working at heights (WAH).

.1 WAH is inherently hazardous and may expose personnel to injury and possible death. Research carried out by various agencies shows that falls from height usually occur as a result of poor management control and/or risky behaviours rather than because of equipment failure.
.2 All Surveyors who are expected to WAH should be trained in safety requirements for such activities. This training shall include the topics listed in paragraph 8.2 above, including recognizing, evaluating and managing the hazards and the risks associated with WAH and use of personal protective equipment for fall protection.
.3 All Surveyors who are expected to WAH shall meet the following minimum requirements:
  .1 WAH should only be undertaken when weather conditions are such that the health and safety of Surveyors is not put at risk. The weather may not only affect Surveyors WAH on an open deck, but may also adversely affect Surveyors when WAH inside a vessel which is moving as a result of wind or wave action.
  .2 Personal protection equipment protects only the user/wearer and requires action by the individual, such as properly wearing and adjusting it, for it to work. Examples include work restraint equipment which prevents a fall and fall arrest equipment which minimizes the consequences of a fall.
  .3 Procedures for WAH are in place, are current and are being followed.
  .4 Safety measures, including the following, should be taken by a responsible person prior to survey/inspection to the satisfaction of the attending Surveyor.
    a) The equipment's range of use should be agreed with the operator before using the equipment;
    b) Permissible load and reach limitations should not be exceeded.
  .5 Barriers, or other equivalent arrangements, should be in place to prevent objects falling from the work area which may harm any personnel in the vicinity below.

.6 Rescue facilities and procedures and support personnel should be readily available to permit evacuation in the event of imminent danger and/or to meet an emergency.

.7 When Surveyors are working in the vicinity of flush manholes and other small openings of comparable size in the deck and other working surfaces, such openings should be suitably covered or guarded, except where the use of such guards is made impracticable by the work actually in progress. In such situations use of appropriate signage should be considered.

.8 When Surveyors are working around open hatches not protected by coamings or around other large openings, the edge of the opening should be guarded in the working area, except where the use of such guards is made impracticable by the work actually in progress. In such situations use of appropriate signage should be considered.

.9 When Surveyors are exposed to unguarded edges of decks, platforms, flats, and similar flat surfaces more than 1.5 m above a solid surface, the edges should be guarded by adequate guardrails, unless the nature of the work in progress or the physical conditions prohibit the use or installation of such guardrails. In such situations, use of appropriate signage should be considered.

.10 When Surveyors are working near the unguarded edges of decks of vessels afloat, or in situations where there is a danger of falling into water, they should be protected by personal flotation devices, in lieu of personal fall protection equipment.

.11 Sections of bilges from which floor plates or gratings have been removed should be guarded by guardrails except where they would interfere with work in progress. If these open sections are in a walkway, suitable planks should be put in place, side by side, or equivalent, should be laid across the opening to provide a safe walking surface.

.12 Surveyors should be familiar with the procedures, preconditions, risks and safety precautions relating to the work.

.13 Equipment related to WAH is in compliance with relevant and applicable standards.

.14 Owners/site managers' 'Responsible Person(s)' are responsible for providing means of access which are suitable and safe for the work to be carried out. The equipment, where applicable, should be operated/erected by qualified personnel. Evidence should be provided that the equipment has been properly maintained and inspected before each use; that formal inspections have been held annually, as a minimum; that re-inspections have been completed if any modifications from the original configuration have been carried out.

.15 Suitable and sufficient steps should be taken to ensure, so far as is practicable, that in the event of a fall by any person the fall arrest equipment does not itself cause injury to that person.

.16 The access and exit arrangements should be safe and clear of obstacles.

.17 Communication arrangements should be adequate.

.18 Lighting should be adequate to allow safe working. Lighting in a work area may be a temporary arrangement cabled into the area requiring additional protection against possible trip induced falls. Whenever possible, natural lighting should be provided in the work area during inspection.

.19 The tools and equipment used for WAH should be secured against falling.

.20 Effects of extreme temperature should be adequately considered.

.21 Surveyors should verify that the necessary arrangements for WAH are suitable for the intended activity.
.22 No Surveyor should carry out a survey from a 'one-man' lifting basket.
.23 No Surveyor should perform survey using rope access, unless specifically trained, qualified and authorized.

.4 Work over sea may be permitted provided the ship is not being navigated and weather and sea conditions are satisfactory. As a guidance the following may be applied:
.1 The weather and sea condition does not exceed Beaufort Sea State Scale 3 which corresponds to wind speed of 17 to 21 knots, moderate waves of height of about 2 m, many white caps and possible spray;
.2 Man over board (MOB) preparedness is in place;
.3 A rescue boat is operative and can be launched/retrieved in case a person falls into the sea;
.4 the visibility is good enough to perform the work and rescue any person that may fall into the sea.

.5 When working over sea:
.1 a safety guard should be present and monitor the Surveyor's location over sea at all times. The safety guard should be familiar with and carry out tasks stated in the safety guard's duties in connection with work over sea.
.2 A life buoy with line and light should be readily available.
.3 Everyone working over open sea should wear a life vest and/or flotation device.
.4 Overboard discharges etc. should be secured, for example from fire water line.

.6 A fall arrest system should be fitted such that there is adequate clearance for it to deploy, and to prevent the Surveyor from hitting an obstruction or the ground before the fall is stopped. Many recognized practices specify either a guardrail system, safety net system, or personal fall arrest system to protect the Surveyor when exposed to a fall of 1.8 m or more from an unprotected side or edge.

.7 Personal fall protection system (PFPS) should be provided where applicable and appropriate.

.8 Scaffolding should be suitably designed, constructed, inspected and maintained by competent personnel. Scaffolds should be built according to recognized standards or as a minimum:
.1 be designed for the job/load;
.2 have scaffold poles made of metal and scaffold tubes linked by rigid angle couplers;
.3 be placed on a firm foundation;
.4 have good stability with a stable structure and be anchored with diagonal bracing at regular intervals;
.5 have an adequate platform fully boarded with toe boards and guard rails fitted at all open ends;
.6 walkways with strong, continuous, clean, non-slippery platform boards;
.7 be free from loose materials objects/tools;
.8 be suspended scaffolds/staging to have minimum of six (6) evenly spaced suspension points made of steel wire ropes or chains as near vertical as possible;
.9 have suspension points made of steel wire ropes or chains evenly spaced and as near vertical as possible;
.10 be provided with safe access arrangement.

.9 The scaffolding should be approved by the Competent Person.

.10 Portable ladders may be used for access to any structural members as a supplement to and/or additional to permanent means of access.

.11 Portable ladders should be designed based on a recognized International or National Standard. The rungs and steps of portable ladders should be designed to minimize slipping (e.g. corrugated, knurled, dimpled or coated with skid resistant material).

.12 Portable ladders should be:

- .1 designed for the intended activity;
- .2 not more than 5 m in length;
- .3 rest on a stable, strong, suitably sized immobile footing;
- .4 set at a suitable angle (approximately 75 degrees);
- .5 well maintained and free of oil, grease and slipping hazards;
- .6 of sufficient length to extend above the exit platform to permit ease of exit/Entry;
- .7 equipped with feet prevented from slipping during use by securing the stiles at or near their upper and lower ends by any anti-slip device or by other arrangements of equivalent effectiveness;
- .8 slip resistant feet should not be used as a substitute for the care in placing, lashing or holding a ladder upon a slippery surface;
- .9 having another worker “foot” the ladder is not an effective means of securing the ladder and would only be suitable when other means are impracticable;
- .10 portable ladders should be used on top of bottom or deep stringer platforms so that the free falling height does not exceed 6 m; if it is necessary to exceed this height, there should be at least 3 m of water above the highest structural element in the bottom to provide a "cushion" or a safety harness is to be used; the free falling height above the water surface should not exceed 6 m.

.13 Surveyors should use fall protection equipment when accessing a height more than 4 m using a vertical ladder.

.14 Vertical ladders should be fixed both at top and bottom.

.15 Suspended ladders should be secured to prevent displacement or swinging.

.16 Portable ladders should have rubber caps at both ends and have no visual deformation.

.17 Mobile Elevating Work Platforms (MEWP) should be:

- .1 certified for use and applicable load;
- .2 fitted with controls at the bottom able to override controls in the basket;
- .3 provided with safety functions and limit switches as applicable;
- .4 free of loose parts and have tools secured;
- .5 inspected and have controls and safety functions tested before each use;
- .6 maintained in good condition, as per manufacturer’s recommendation.

.18 The MEWP should be subjected to a thorough examination at least every six months. Vehicle-mounted elevating work platform or a self-propelled boom-supported elevating work platform should be subjected to annual inspection and certification.

.19 MEWP should be operated from within the basket, by a trained person. MEWP operators should have attended a recognized operator training course and received a certificate, card or ‘licence’, listing the categories of MEWP the bearer is trained to operate. The training licence or card should be currently valid.

.20 Basket platform and lifting gear should be certified for applicable safe workload and certified for transportation of personnel. Crane operator should be trained and competent.

.21 Cranes, winches and other devices used for hoisting and lowering movable work platforms should:

.1 be operated as slowly as practicable while supporting the work platform;

.2 be lowered under power, if the device is powered; and,

.3 not be equipped with a free running boom or hoisting winch controlled only by brakes.

.22 All Surveyors who are expected to WAH shall have available a set of Personal Protective Equipment in accordance with paragraph 9.4 above. In addition, the following PPE may be used by the Surveyor.

.1 strap provided flashlight, as necessary and optional head torch where appropriate;

.2 Personal fall protection system (PFPS), as necessary.

.23 The Surveyor should use the necessary personal safety equipment according to the specific conditions and the survey being carried out.

13. Precautions related to use of portable ladders for close-up surveys.

.1 The shipowner should ensure that equipment selected for temporary work affords adequate protection against the risks of falls from a height.

.2 The manner in which portable ladders can most safely be used by workers should be specified.

.3 Portable ladders should rest on a stable, strong, suitably sized, immobile footing so that the rungs remain horizontal. Suspended ladders should be attached in a manner so that they cannot be displaced and so that swinging is prevented.

.4 The feet of portable ladders should be prevented from slipping during use by securing the stiles at or near their upper and lower ends, by any anti-slip device or by other arrangements of equivalent effectiveness. Slip resistant feet should not be used as substitute for the care in placing, lashing or holding a ladder upon slippery surface.

.5 Portable ladders should meet the following criteria:

.1 Not more than 5 m in length for freestanding portable ladders.

.2 Non-self-supporting and self-supporting portable ladders should support at least four times the maximum intended load.

.3 The minimum clear distance between side rails for all portable ladders should be according to a recognized standard.

.4 The rungs and steps of portable ladders should be designed to minimize slipping, e.g. corrugated, knurled, dimpled, coated with skid resistance material.

.6 Ladders should be maintained free of oil, grease and other slipping hazards.

.7 Other requirements that shall be met for portable ladders are specified in Section 12 above, paragraph 12.12.

14. Precautions related to use of rafts or boats for survey.

.1 For overall survey, means shall be provided to enable the attending Surveyor(s) to examine the structure in a safe and practical way.

.2 Surveys of tanks or spaces by means of rafts or boats may only be undertaken with the agreement of the attending Surveyor(s), who shall take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions.

.3 When rafts or boats will be used for close-up survey the following conditions shall be observed:
  .1 Only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, shall be used;
  .2 The boat or raft shall be tethered to the access ladder and an additional person shall be stationed down the access ladder with a clear view of the boat or raft;
  .3 Appropriate lifejackets shall be available for all participants;
  .4 The surface of water in the tank shall be calm (under all foreseeable conditions the expected rise of water within the tank shall not exceed 0.25 m) and the water level stationary. On no account shall the level of the water be rising while the boat or raft is in use;
  .5 The tank or space must contain clean ballast water only. When a thin sheen of oil on the water is observed, further testing of the atmosphere is to be done to ensure that the tank or space is safe for entering;
  .6 At no time shall the upside of the boat or raft be allowed to be within 1 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses shall only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times;
  .7 If the tanks (or spaces) are connected by a common venting system, or inert gas system, the tank in which the boat or raft is to be used shall be isolated to prevent a transfer of gas from other tanks (or spaces).

.4 In addition to the above, rafts or boats alone may be allowed for close-up survey of the under-deck areas for tanks or spaces if the depth of the webs are 1.5 m or less. If the depth of the webs is more than 1.5 m, rafts or boats alone may be allowed only:
  .1 When the coating of the under-deck structure is in GOOD condition and there is no evidence of wastage; or
  .2 If a permanent means of access is provided in each bay to allow safe entry and exit. This means:
    a) access direct from the deck via a vertical ladder and a small platform fitted approximately 2 m below the deck in each bay; or
    b) access to deck from a longitudinal permanent platform having ladders to deck in each end of the tank. The platform shall, for the full length of the tank, be arranged in level with, or above, the maximum water level needed for rafting of under deck structure. For this purpose, the ullage corresponding to the maximum water level is to be assumed not more than 3m from the deck plate measured at the midspan of deck transverses and in the middle length of the tank.

.5 The attending Surveyor(s) shall always be accompanied by at least one responsible person assigned by the company experienced in tank and enclosed spaces inspection. In addition, a backup team of at least two experienced persons shall be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team shall continuously observe the work in the tank or space and shall keep lifesaving and evacuation equipment ready for use.

.6 A communication system shall be arranged between the survey party in the tank or space being examined, the responsible officer on deck, the navigation bridge and the personnel in charge of handling the ballast pump(s) in the pump control room. These communication arrangements shall be maintained throughout the survey.

.7 Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.
.8 As appropriate, adequate protective clothing shall be made available and used during the survey.

15. Precautions related to pressure testing and working with pressure system.

15.1 Training and Personal Protective Equipment.

.1 All Surveyors who are expected to carry out inspections on pressure systems or participate in pressure testing should be trained in safety aspects and requirements for such activities as required in Section 8 above.
.2 The Surveyor should use the necessary personal safety equipment and Personal Protective Equipment in accordance with paragraph 9.4 above. In addition, the following PPE may be used by the Surveyor:
  .1 Body protection/apron, where required.
  .2 Safety Face Shields, where required.
  .3 Additional special PPE, if and as required.
.3 Other PPE not listed above, as found necessary and applicable.

15.2 General precautions related to pressure testing.

.1 Any pressurized equipment has the potential to cause serious injury or even death in the event of a catastrophic failure. In order to reduce the risk, appropriate risk assessment should be carried out considering the test items, equipment, medium, procedure and ambient conditions. Specifically, the following points should be taken into consideration:
  .1 Where the Surveyor is not protected by suitable barriers / screens, verify and confirm that the test procedure is followed, test equipment is in good condition, isolating valves are tight, test pressure gauges (at least 2 pcs) are calibrated and are of suitable range as per test pressure, that they are not isolated or bypassed, and that releasing mechanisms or safety valves are of adequate size/rating and correctly set. Pipe work, especially flexible piping, should be free from damage or leaking joints. Inlet, outlet and release arrangement for the test medium to or from the item being tested are properly fabricated and supported, including their appropriate dimensions (e.g. Smaller diameter for inlets and bigger diameter for outlets, as well as releasing means).
  .2 Test pressure should be applied gradually to avoid shock loading of the item under test. Where items are tested together this should only be accepted where their test pressures are identical. Where a number of items are tested together, the test pressure should not exceed what is necessary to prove the weakest part but this pressure must meet the test pressure of all parts being tested. The temperature of the test medium should not be lower than that specified in the procedure to avoid the possibility of brittle fracture.
  .3 Close visual inspection of the equipment should be conducted only when the pressure does not exceed the design pressure level for hydraulic pressure tests or pneumatic pressure test, the pressure should be reduced to the leak test level.

.4 Couplings and connections of flexible hoses subjected to the pressure should be adequately secured to prevent injury due to “flailing” in the event of failure. Adequate precautions should be in place to protect test personnel and observers, either by using a purpose-built test enclosure (barricades or strong baskets) or by putting in place a safety zone. The sizes of the enclosure or the safety zone will depend on the type of test and pressures involved.

.5 Where leakage is detected in joints or fittings, whether on the item under test or on the test equipment itself, pressure should be reduced to atmospheric pressure prior to rectifying the leak. On no account should the test piece be subjected to a “hammer test” while under pressure and this includes the “peening” of welds to prevent seepage. Other means to attempt correction of leaks under pressure, especially welding, should be avoided.

.6 Necessary personal protective equipment, as applicable, should be worn by the Surveyor working within the test area.

.7 Where safety valves are being tested (floated), the venting arrangements should lead away from the work/test area. In case of setting a boiler safety valve, drainage arrangements and escape piping should be particularly examined for blockages, appropriate support and damage.

.8 For higher pressure tests Surveyor should witness the tests from a remote location. For these cases, provision of pressurization, depressurization and suitable time recording instruments may be required by the attending Surveyor.

.9 The test procedure should specify precautions to safeguard against hazards resulting from the possible expansion of the test medium, during the test. If a pressure test is to be maintained for a period of time, during which the test medium in the system is subject to thermal expansion, precautions should be taken to avoid excessive pressure. Additional pressure relief devices, set at an appropriate percentage of the test pressure, are recommended, during the pressure test of these types of items/systems (e.g. Mud Line in the Offshore industry is tested to 15,000 – 20,000 psi) (1034.21 – 1378.95 bar).

15.3 Precautions specific to hydraulic testing.

.1 In addition to the general precautions cited above the following points should be taken into consideration:

.1 When water is used as the test medium the temperature during the test should not be less than 7°C in order to avoid the possibility of ice damage. When a pressure test is carried out with water at an ambient temperature below 0°C it has to be confirmed that the test medium, test gauges and connecting lines cannot freeze.

.2 The item under test should be totally filled with the fluid to be used as the test medium and closed systems should be properly vented. Where, due to the design of the item under test, it is not possible to eliminate all air/gas pockets then the additional precautions noted below for pneumatic testing should be considered.

.3 The effect of the weight of the test medium on the item under test, and any supporting structure or foundation needs to be especially considered.

.4 If liquid other than water is used as a test medium, e.g. kerosene, then hazards specific to that medium should also be considered.

15.4 Precautions specific to pneumatic testing.

.1 In addition to the general precautions cited above the following points should be taken into consideration:

.1 Because of the potential for high levels of stored energy, the internal volume of any items to be pneumatically tested should be kept to a minimum by isolating certain sections or testing components individually. Alternatively, the use of non-compressible material should be considered.

.2 For large volumes under test, consideration needs to be given to the effects of blast waves and projectiles in the event of a catastrophic failure. The test procedure should specify a suitably sized restricted zone to protect human life and properties in such cases.

.3 Local chilling due to filling and emptying of the items under test needs to be controlled to avoid the possibility of local brittle fracture. This can be achieved by maintaining constant flow rates across inlets or exhaust nozzles. The internal pressure of the test medium should also be controlled to avoid any shock loading by using suitably sized reducing valves and flow control valves

.4 Normally, class society Rules refers to the use of U-Tube for Air Leak test during testing of structural tanks and spaces for tightness. However, rules may allow the use of a releasing mechanism, in place of a U-Tube. If a safety valve is selected, Surveyor should be aware that, in some cases, this approach has resulted in catastrophic failure of the space being tested. If a releasing mechanism is used in lieu of a U-tube the Surveyor should carefully review the safety precautions adopted for the test and evaluate the risks after taking into account necessary precautions and whether the design of the mechanism is similar to the U-tube principle (i.e. suitable to be lifted by the predetermined excessive pressure, and not subject to any kind of spring or restricting device).

15.5 Precautions specific to hydro-pneumatic testing.

.1 There are also standards that accept the method of test that combines liquid and gas (normally water and air) as the test mediums. Where the subject method is applied, then the additional precautions noted above should be considered, as applicable for each medium.

15.6 Pressure piping tests.

.1 Pressure piping leak tests should be conducted using the hydrostatic method.

.2 A pressure piping system should not be tested at a temperature that is colder than its minimum design temperature.

.3 When conducting pressure tests, the ductile to brittle transition temperature and the possibility of brittle fracture should be considered by the competent person.

.4 Before testing any pressure piping system, the Surveyor should obtain from the Owner/User or the facility management confirmation that the materials, construction and installation of the piping system is in accordance with applicable regulation and/or the approved design.

.5 When conducting tests or initial starts ups, applicable safety precautions should be observed and only essential personnel should be present during the test.

15.7 Pressure systems.

.1 The failure of pressurized equipment or systems can result in fatalities and serious injuries and cause major damage to property.

.2 Surveyor are also called upon to examine or witness tests of systems which are under operating working pressure (e.g. during steering system trial, windlass trial, trial of thrusters, jacking systems, drilling system, mud circulating system, cargo system).

.3 Examples of pressure systems and equipment include but are not limited to:

- .1 boilers and steam heating systems.
- .2 pressurized process plant and Piping.
- .3 compressed air systems (fixed and portable).
- .4 hydraulic systems such as steering gear, windlass, etc.
- .5 fuel oil circulating system.
- .6 liquid cargo loading/unloading system
- .7 heat exchangers and refrigeration plant.
- .8 valves, steam traps and filters.
- .9 pipe work and hoses.
- .10 pressure gauges and level indicators.

15.8 Hazards of pressure system.

.1 Pressure systems present particular hazards because pressure vessels can release large amounts of stored thermal and kinetic energy, following leaks or explosion of gases, liquids, vapours or steam.

.2 The main hazards while dealing with such systems are:

- .1 impact from the blast of an explosion or release of compressed gas or liquid.
- .2 impact from parts of equipment that fail or any flying debris.
- .3 contact with the released liquid, gas or steam, including compressed air.
- .4 fire resulting from the escape of flammable liquids or gases.

.3 Pressurized systems may fail at the point of connection of flexible hoses (e.g. Portable tools, causing the unsupported length of hose to whip or snake violently).

15.9 Principal causes of incidents in pressure systems

.1 Principal causes of incidents are:

- .1 defective equipment and / or system design.
- .2 lack of maintenance of pressure equipment.
- .3 unsafe installed systems of work leading to release of pressure.
- .4 operator error, insufficient training/supervision.
- .5 unsafe / worn out installation.
- .6 inadequate repairs or modifications.

15.10 General safety requirements for pressure systems.

.1 The objective is to control the hazards presented by a pressure system under test:

- .1 by way of design, installation, maintenance and periodic examination.
- .2 by providing a robust regime for the management of pressure systems, including requirements for preliminary and periodic examinations of pressure systems.

.2 The Owner/User of the pressure system should:
  .1 maintain an accurate inventory of its pressure equipment.
  .2 control and verify that its pressure equipment is inspected at the prescribed intervals.
  .3 maintain appropriate records of inspections.

.3 Before working in the vicinity of a pressure system, the class Surveyor should verify that the following checks have been performed by the Owner/User:
  .1 is the gas or liquid toxic or flammable?
  .2 what are the process pressures and temperatures?
  .3 what are the safe operating limits?
  .4 is there a set of operating instructions for all of the equipment?
  .5 have the operators had suitable training on the operating instructions?
  .6 have the protective devices been set correctly and in good operating condition?
  .7 audible and visual warning devices are in satisfactory condition.
  .8 do the fitted safety valves, bursting disc and other releasing systems discharge towards a safe place?
  .9 has the condition of the pressurized system(s) been found satisfactory?

.4 If a Surveyor notes non-compliance with any of the above requirements or a deterioration in the condition of a pressurized system (e.g. corrosion) the survey in the vicinity should not be undertaken until a thorough investigation and rectification has been carried out by the owner.

.5 Surveyor should confirm that the system under survey is generally in satisfactory condition and the Owner/User of pressure systems has a Written Scheme of Examination, if required by statutory regulations and maintenance of the system and has assigned a competent person.

.6 No part of the pressure system should be allowed to operate beyond the safe operating limits.

.7 To check and confirm that limits are not exceeded, protective devices should be correctly specified and, where applicable, adjusted to the correct setting.

.8 The Owner/User of a pressure system should keep control and verify that it is operated in accordance with the manufacturer's recommendations or in accordance with the Written Scheme of Examination, if applicable.

.9 Instrumentation and measuring equipment are properly selected, maintained and calibrated.

.10 Surveyor should consider also the following precautions before attending a pressurized system test:
  .1 Overpressure Protection.
    a) applicable industry regulations require that all pressure equipment be provided with overpressure protection.
    b) it is required that the Owner/User of the pressure equipment controls and verifies that it has been installed with an overpressure protection that is certified as: a pressure relief valve that meets the requirements of the applicable Code (e.g. ASME Code, Class Rules) or other means of overpressure protection acceptable to the Administration/Class Society.
    c) The protection device is required to be set to open before the pressurized equipment exceeds the maximum allowable working pressure.

d) The Owner/User of the equipment under pressure controls and verifies that the overpressure protection system is designed and maintained so that the maximum pressure in the equipment does not exceed the prescribed limit allowed in the applicable code/standard.

.2 Pressure Relief Devices.

a) Adjustable parts of the pressure relief device are required to be sealed at the time of servicing and remain sealed during operation. Seals are to be installed in a manner that prevents changing the adjustment of a pressure relief device without breaking the seal.

b) A pressure relief device is to be serviced at an interval acceptable to the regulating authority. A pressure relief valve is to be serviced, repaired, set and sealed only by a qualified/competent person.

c) Any change to the adjustable parts of the pressure relief devices are to be done on a controlled basis, as this can affect the system operation and safety. Adjustments are to be made by duly qualified and authorized persons only.

d) Safety Management System, under ISM Code, requires that all safety equipment and relieving devices, including alarms and measuring instruments are tested regularly to enhance their reliability. Records of this should be made available to the Surveyor.

.11 Owners/Users are responsible for controlling and verifying that all pressure systems and associated pipes and equipment are operated by qualified personnel. Evidence should be provided that the equipment has been properly maintained and inspected as per documented procedures.

.12 Prior to any modifications being carried out, Owners/Users should conduct a proper assessment to confirm that all the technical and safety aspects of the change have been considered. Modifications are to be reviewed/approved by the Class Society.

.13 Owners/Users should also carry out a risk assessment and take appropriate measures to remove or mitigate the risk of hazards while working with pressure systems on board a ship, offshore unit or in industrial workshops.

.14 When pressure systems are under repair, precautions need to be in place to prevent the system being accidently restarted before all the safety devices or systems have been restored.

.15 Whenever possible, systems should be depressurized before maintenance work is carried out, but for various reasons this may not be always achievable. In such cases it may be possible to safely isolate the part of the system which requires attention. In certain circumstance work on a live system may be necessary.

.16 Protective measures for work on a pressure system may need to address “Permit to Work” arrangements, isolation procedures and methods.

16. Follow-up and measurement of the results.

.1 The results of the application of this Procedure are monitored, measured, analyzed and evaluated by each Surveyor nominated and authorized by ICS Class during all surveys.

.2 The Annex 1 of this Procedure establishes the format of a Statement of Fact that must be issued and signed by all Surveyors authorized by ICS Class to conduct surveys. This Statement of Fact establishes the Surveyor's commitment to work at a safe work environment.

.3 The Statement of Fact issued and signed by Surveyor shall be recorded and available in his individual file.

17. Documented information revoked.

.1 Statutory Notice Nº.100/2015-Recommendations for entering enclosed spaces aboard ships.

18. Annexes.

.1 Annex 1: Statement of Fact (Surveyor's commitment to work at a safe work environment).

Annex 1

STATEMENT OF FACT
(Surveyor's commitment to work at a safe work environment)

I, _____, authorized Surveyor of Intermaritime Certification Services (ICS Class), belonging to the Inspection Office Nº._____ with Identity Card Nº._____, declare to have knowledge of the Procedure PO02-P03 to work in a safe work environment and my commitment to comply with all the provisions and requirements of such procedure in order to ensure a safe working environment during all surveys on board ships, at the shipyard/repair yards while building, repairing, or converting ships and/or other marine units or parts thereof.

I also declare my commitment to be responsible for:

1. Taking an active role for my own safety and precautions on board ship/at the shipyard, and not to continue with the survey if noticing any potential danger which has not been dealt with.

.2 Ensuring my own training and competency in health and safety requirements in accordance with the provisions of the Section 8 of the Procedure PO02-P03.

.3 Providing my own Personal Protective Equipment in accordance with the provisions of the Section 9 of the Procedure PO02-P03, and using during surveys, as required and necessary.

Issued at: _____ on the _____

Signature of the authorized Surveyor: _____