

Polski Rejestr Statków

RULES

PUBLICATION NO. 51/P

PROCEDURAL REQUIREMENTS FOR SERVICE SUPPLIERS

2016

Publications P (Additional Rule Requirements) issued by Polski Rejestr Statków complete or extend the Rules and are mandatory where applicable.



GDAŃSK

Publication No. 51/P – Procedural Requirements for Service Suppliers – 2016, based on the IACS Unified Requirements Z17 (Rev. 10 and 11), is an extension of the requirements contained in *Part I – Classification Regulations of the Rules for the Classification and Construction of Sea-Going Ships*, as well as in all other PRS *Rules*, in which reference to the *Publication* has been made.

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1 GENERAL

1.1 Firms providing services, such as measurements, tests or maintenance of safety systems and equipment are subject to approval by PRS in accordance with the mandatory procedure given in the present *Publication*.

2 OBJECTIVE

2.1 This procedure aims to set minimum requirements for the approval and certification of service suppliers and is applicable to both initial and renewal audits.

3 DEFINITIONS

Manufacturer – a company that manufactures equipment required to be periodically serviced and/or maintained.

Service Supplier (a Service Supplier or category of Service Supplier may be referred to here after simply as ‘supplier’) – a person or company, not employed by PRS, who at the request of an equipment manufacturer, shipyard, vessel’s owner or other client acts in connection with inspection work and provides services for a ship or mobile offshore drilling unit such as measurements, tests or maintenance of safety systems and equipment, the results of which are used by surveyors in making decisions affecting classification or statutory certification and services.

Agent – a Person or Company authorised to act for or to represent Manufacturer or approved/recognized service supplier.

Subsidiary – a Company partly or wholly owned a Manufacturer or approved/recognized service supplier.

Subcontractor – a Person or Company providing services to a Manufacturer or approved/recognized service supplier, with a formal contract defining the assumption of the obligations of the service supplier.

4 APPLICATION

4.1 The present *Publication* applies to the approval of the following categories of service suppliers:

4.1.1 Statutory services:

- Firms engaged in servicing of inflatable liferafts, inflatable lifejackets, hydrostatic release units, inflatable rescue boats, marine evacuation systems;
- Firms engaged in inspections and testing radio communication equipment;
- Firms engaged in inspections and maintenance of self-contained breathing apparatus;
- Firms engaged in annual performance testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR);
- Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships;
- Firms engaged in inspections of low-location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems;
- Firms engaged in the servicing and maintenance of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks;
- Firms engaged in inspection performance testing and maintenance of Automatic Identification Systems (AIS).

4.1.2 Classification and/or Statutory services:

- Firms engaged in thickness measurements on ships except:
 - (1) non-ESP ships less than 500 gross tonnage, and
 - (2) all fishing vessels.
- Firms performing in-water survey of ships and mobile offshore units,

- Firms engaged in inspections and maintenance of fire-extinguishing equipment and fire-protection systems;
- Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment;
- Firms engaged in measurements of noise level on board ships;
- Firms engaged in the examination of ro-ro ship's bow, stern, side and inner doors;
- Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82) and the requirements of IACS UI SC223 and /or MSC.288(87), as amended;
- Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service.

4.1.3 Where PRS accepts work of a third party (eg. service supplier) approved by itself, PRS shall verify the performance of such services. For statutory service, the flag State may increase the scope of verification to be applied to these services. The process shall be defined within PRS quality management system. For the purpose of accountability to the flag State, the work performed by the third party (eg. service supplier) constitutes the work of PRS and shall be subject to the requirements incumbent upon PRS¹ under the RO Code IMO MSC.349(92) and MEPC.237(65).

4.2 Where the results of the following service providers are used by PRS Surveyor in making decisions affecting classification services then that service provider shall be approved and verified² by PRS.

- firms engaged in thickness measurements on ships except:
 - (1) non-ESP ships less than 500 gross tonnage and
 - (2) all fishing vessels.
- firms performing in-water survey of ships and mobile offshore units;
- firms engaged in tightness testing of closing appliances such as hatches doors etc. with ultrasonic equipment.

4.3 Where such services are used by PRS Surveyors in making decisions affecting statutory certification and service, the firms shall be approved and verified² by PRS if PRS is granted authorisation by the relevant Flag Administration (i.e. the flag of the ship on which the servicing is to be done or the service equipment is to be used). For such services, PRS may accept approvals done by:

- the Flag Administration itself,
- duly authorized organisations acting on behalf of the Flag Administration, or
- other organizations those are acceptable to the Flag Administration (e.g. other governments, etc.).

4.4 Use of the approved service suppliers is not mandatory for the following services, unless instructed otherwise by the flag Administration with respect to statutory certification.

- Firms engaged in inspections of low-location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems;
- Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships;
- Firms engaged measurements of noise level on board ships;
- Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82) and the requirements of IACS UI SC223 and /or MSC.288(87), as amended;
- Firms engaged in the examination of ro-ro ship's bow, stern, side and inner doors.

4.5 Detailed requirements specific to the various categories of suppliers are given in Chapter 9. National and/or international requirements may give additional requirements. Reference to such national and/or international requirements is given in Chapter 9.

¹ Effective as of 1 July 2016

² Verification effective as of 1 July 2016.

5 PROCEDURE FOR APPROVAL AND CERTIFICATION

5.1 Submission of Documents

5.1.1 The following documents* shall be submitted to PRS for review. General requirements concerning suppliers are given in 5.2, and specific requirements as relevant, in Chapter 9.

- Outline of company – organisation and management structure, including subsidiaries to be included in the approval
- List of nominated agents, subsidiaries and subcontractors
- Experience of the company in the specific service area
- For categories of Service Suppliers that require authorization from manufacturers, manufacturer's documentary evidence that Service Supplier has been authorized or licensed to service the particular makes and models of equipment for which approvals is sought shall be provided
- List of operators/technicians/inspectors documenting training and experience within the relevant service area, and qualifications according to recognised national, international or industry standards, as relevant
- Description of equipment used for the particular service for which approval is sought
- Guide for operators of such equipment
- Training programmes for operators/technicians/inspectors
- Checklists and record formats for recording results of the performed services
- Quality Manual and/or documented procedures covering requirements in 5.5
- Documented procedures for communication with the crew prior to commencing work, so that it is safe to decommission the equipment being maintained, and to provide a safe system of work in place
- Evidence of approval/acceptance by other class societies or bodies, if any
- Information on the other activities which may present a conflict of interest
- Record of customer claims and of corrective actions requested by certification bodies

5.2 General Requirements

5.2.1 Extent of Approval – The supplier shall demonstrate, as required by 5.2.2 ÷ 5.2.11, that he has the competence and control system needed to perform the services for which approval is sought.

5.2.2 Training of Personnel – The supplier is responsible for the qualification and training of own personnel to a recognised national, international or industry standard, as applicable. Where such standards do not exist, the supplier shall define standards for the training and qualification of personnel relevant to the functions each is authorized to perform. The personnel shall also have an adequate experience and be familiar with the operation of any necessary equipment. Operators/technicians/inspectors shall have had a minimum of one year on-the-job training. Where it is not possible to perform internal training, a program of external training may be considered as acceptable.

5.2.3 Supervision – The supplier shall provide supervision for all services provided. The responsible supervisor shall have had a minimum of two years of experience as an operator/technician/inspector within the activity for which the supplier is approved. For a supplier consisting of one person, that person shall meet the requirements of a supervisor.

5.2.4 Personnel Records – The supplier shall keep records of approved operators/technicians/inspectors. The records shall contain information on age, education, formal education, training and experience for the services for which they are approved.

5.2.5 Equipment and facilities – The supplier shall have the necessary equipment and facilities for the service to be supplied. A record of the equipment used shall be kept and available. The record shall contain information on maintenance and results of calibration and verifications. PRS³ shall assess and record the validity of previous measuring results when the equipment is found not to conform to requirements. PRS shall take appropriate action on the equipment affected.

* It is recommended that the above-mentioned documents should be prepared and submitted in electronic form.

³ Effective as of 1 July 2016.

5.2.6 Control of Data³

When computers are used for the acquisition, processing, recording, reporting, storage, measurement assessment and monitoring of data, the ability of computer software to satisfy the intended application shall be documented and confirmed by the service supplier. This shall be undertaken prior to initial use and reconfirmed as necessary.

Note: Commercial off-the-shelf software (e.g. wordprocessing, database and statistical programmes) in general use within their designed application range may be considered to be sufficiently validated and do not require any subsequent confirmation.

5.2.7 Where several servicing stations are owned by a given company, each station shall be assessed and approved, except as specified in 5.5.3.

5.2.8 Procedures – The supplier shall have documented work procedures covering all services supplied.

5.2.9 Subcontractors – The supplier shall give information on agreements and arrangements if any parts of the services provided are subcontracted. Particular emphasis shall be given to quality management by the supplier in following-up such subcontracts. Subcontractors providing anything other than equipment shall also meet the requirements of 5.2 and 5.5.

5.2.10 Verification – The supplier shall verify that the services provided are performed in accordance with the approved procedures.

5.2.11 Reporting – The report of performed services shall be prepared in a form acceptable to PRS. The report shall detail the results of inspections, measurements, tests, maintenance and/or repairs performed. Special guidelines are given in Chapter 9. The report shall include a copy of *Approval Certificate*.

5.2.12 Documented procedures and instructions shall be available for the recording of damage cases and defects found during inspections, servicing and repair work. This documentation shall be made available upon request.

5.3 Inspection of Service Supplier

Upon reviewing the submitted documents with satisfactory result, the service supplier is audited in order to ascertain that the service supplier is duly organised and managed in accordance with the submitted documents, and that it is considered capable of conducting the services for which approval is sought.

5.4 Practical Demonstration

Approval is conditional on a practical demonstration of the performance of the specific service as well as satisfactory reporting being conducted. At renewal inspections, evidence of performance verified by PRS surveyor, since the previous inspection is sufficient to satisfy this requirement.

5.5 Quality System

5.5.1 The service supplier shall have a documented system covering at least the following:

- code of conduct for the relevant activity,
- maintenance and calibration of measuring equipment,
- training programmes for operators/technicians/inspectors,
- supervision and verification to ensure compliance with operational procedures,
- recording and reporting of information,
- quality management of subsidiaries, agents and subcontractors,
- job preparation,
- periodic review of work process procedures, complaints, corrective actions, and issuance, maintenance and control of documents.

5.5.2 A documented Quality System complying with the current version of ISO 9000 series and including the items would be considered acceptable.

5.5.3 If a manufacturer of equipment (and/or its service supplier) applies to PRS for inclusion of his nominated agents and/or subsidiaries in the approval, then he shall have implemented a quality system certified in accordance with the current version of ISO 9000 series. The quality system shall contain effective controls of the manufacturer's (and/or service supplier's) agents and/or subsidiaries. The nominated agents/subsidiaries shall also have in place an equally effective quality system complying with the current version of ISO 9000 series. Such approval shall be based upon an evaluation of the quality system implemented by the parent company against the current version of ISO 9000 series. PRS may require follow-up audits on such agents or subsidiaries against the most current version of ISO 9000 series to confirm adherence to this quality system.

5.6 Service Suppliers Relations with Equipment Manufacturer

5.6.1 A company which works as a service station for manufacturer(s) of equipment (and as a service supplier in this field) shall be assessed by the manufacturer(s) and nominated as their agent. The manufacturer shall ensure that appropriate instruction manuals, material, etc. are available for the agent, as well as of proper training of the agent's technicians. Such suppliers shall be approved either on a case by case basis or in accordance with 5.5.3.

6 APPROVAL CERTIFICATE

6.1 Upon satisfactory completion of both the audit the supplier and the demonstration test, as applicable, PRS Head Office issues *Approval Certificate* stating that the supplier's service operation system has been found to be satisfactory and that the results of services performed in accordance with that system may be accepted and utilised by PRS Surveyors in making decisions affecting classification or statutory certification, as relevant. The *Approval Certificate* shall clearly state the type and scope of services and any limitations or restrictions imposed including type of equipment and/or names of Manufacturers of equipment where this is a limiting restraint. The supplier is also indicated in PRS records of approved service suppliers.

6.2 The validity of *Approval Certificate* shall be a maximum of three years.

6.3 Renewal or endorsement of the of *Approval Certificate* is made at intervals not exceeding three years by verification through audits that approved conditions are maintained or where applicable, on expiry of the supplier's approval received from an equipment Manufacturer, whichever comes first. In the latter case, PRS shall be informed in due course by the service supplier.

7 INFORMATION ON ALTERNATIONS TO CERTIFIED SERVICE SUPPLIER OPERATING SYSTEM

7.1 When any alteration to the certified service operating system of the service supplier is made, such alteration shall be communicated to PRS immediately. Re-inspection may be required when deemed necessary by PRS.

8 CANCELLATION OF APPROVAL CERTIFICATE

8.1 PRS reserves the right to cancel the *Approval Certificate* and inform the IACS Members accordingly (for firms engaged in thickness measurements refer to PR23)

8.2 *Approval Certificate* may be cancelled in the following cases:

- where the service was improperly performed or the results were improperly reported;
- where PRS Surveyor finds deficiencies in the approved service operating system of the supplier and appropriate corrective action is not taken;

- where alterations have been made to the Company’s Quality System relevant to the service supplier certificates, without written notification to PRS;
- where the intermediate audit, if requested as per 6.2, has not been performed;
- where wilful acts or omission are ascertained;
- where any deliberate misrepresentation has been made by the Service Supplier;
- non-payment, in due time, for PRS services.

8.3 A service supplier, whose *Approval Certificate* was cancelled, may apply for re-approval, provided it has corrected the non-conformities which resulted in approval cancellation and PRS is able to confirm it he has effectively implemented the corrective action.

8.4 Expiration or cancellation of the service supplier’s parent company approval automatically invalidates approval of all agents and subsidiaries if these are certified in accordance with 5.5.3.

9 SPECIAL REQUIREMENTS FOR VARIOUS CATEGORIES OF SERVICE SUPPLIERS

9.1 Firms Engaged in Thickness Measurements of Ship

9.1.1 Scope of Services

The scope of services covers the thickness measurement of ship structures, except:

- non-ESP ships of less than 500 gross tonnage, and
- all fishing vessels.

9.1.2 Supervisor

The responsible supervisor shall be qualified according to a recognised national or international industrial NDT standards (e.g. EN ISO 9712 level II or an equivalent standard).

9.1.3 Operators

The operators performing the measurements shall be certified to a recognised national or international industrial NDT standards (e.g. EN ISO 9712 level I or an equivalent standard) and shall have adequate knowledge of ship structures sufficient to elect a representative position for each measurement.

9.1.4 Equipment

On coated surfaces, instruments using pulsed echo technique (either with oscilloscope or digital instruments using multiple echoes, single crystal technique) are required. Single echo instruments may be used on uncoated surfaces, which have been cleaned, and ground.

9.1.5 Procedures

Documented work procedures shall at least contain information on inspection preparation, selection and identification of test locations, surface preparation, protective coating preservation, calibration checks, and report preparation and content.

9.1.6 Reporting

The report shall be based on the guidelines given in the following PRS *Publications: No. 36/P, No. 39/P, No. 46/P, No. 58/P, No. 62/P, No. 64/P, No. 82/P*.

It is recommended that the condition of the measured hull structures should be documented by digital camera, saving the images to CD, enclosed with the measurement report.

9.1.7 Verification

The service supplier shall have PRS Surveyor’s verification of each separate job, documented in the report by the attending Surveyor(s) signature.

9.2 Firms Engaged in Tightness Testing of Closing Appliances such as Hatches, Doors etc. with Ultrasonic Equipment

9.2.1 Extent of engagement

Ultrasonic tightness testing of closing appliances such as hatches, doors etc.

9.2.2 Operators

Operators shall have the following qualifications:

- have knowledge of different closing appliances such as hatches, doors etc. including their design, functioning and sealing features,
- have experience with the operation and maintenance of different closing appliances such as hatches, doors etc.,
- be able to document a theoretical and practical training onboard in using ultrasonic equipment specified.

9.2.3 Equipment

It shall be demonstrated to PRS Surveyor that the ultrasonic equipment is fit for the purpose of detecting leakages in closing appliances.

9.2.4 Procedures

The supplier shall have documented work procedures which shall include the manual for the ultrasonic equipment specified, its adjustment, maintenance, operation and approval criteria.

9.3 Firms Performing In-water Survey of Ships and Mobile Offshore Units

9.3.1 Extent of Engagement

The scope of services covers in-water works during in-water survey of ships and mobile offshore units performed by PRS Surveyors.

In-water works performed by divers include:

- video monitoring by means of a closed circuit television
- auxiliary works (e.g. cleaning, installation of sealing mats, caissons, etc.) which enable PRS Surveyor to perform inspection of the underwater part of the hull.

The conducted works are monitored by PRS Surveyor.

Welding operations, thickness gauging, repairs of propellers and painting may be also performed by divers on the basis of a separate approval certificate.

9.3.2 Training of Personnel

The supplier is responsible for the qualification of its divers and the diving equipment utilised during the inspection. Knowledge of the following shall be documented:

- the ship's underwater structure and appendages, tail shaft, propeller, rudder and its bearings, etc.,
- non-destructive testing in accordance with recognized national or international industrial NDT standards. This requirement only applies if an in-water survey company performs non-destructive testing,
- bearing clearance measurements on rudders and tail shaft,
- under-water video monitoring with TV-monitors on deck, as well as still picture work,
- operation of under-water communication system,
- special equipment and tools e.g. hull cleaners, grinders, cutters, etc.

9.3.3 Plan for Personnel Training

A plan for training the personnel in the reporting system, minimum rule requirements for relevant ship types, ship's underwater structure, measuring of bearing clearances, recognition of corrosion damage, buckling and deteriorated coatings, etc. shall be included.

9.3.4 Supervisor

The responsible supervisor shall be qualified according to the supplier's general requirements and shall have a minimum of two years' experience as a diver performing inspection.

9.3.5 Divers Performing Inspection

The diver performing the inspection shall have had at least one year's experience as an assistant diver performing inspections (including participation in a minimum of 10 different assignments).

9.3.6 Equipment

The following shall be available:

- closed circuit colour television with sufficient illumination equipment,
- two-way communication between the diver and surface staff,
- video recording device connected to the closed circuit television,
- still photography camera,
- equipment for performing thickness gauging, non-destructive testing and measurements, e.g. clearances, indents, etc., as relevant to the work to be performed,
- equipment for cleaning the hull,
- remote operated vehicle if applicable.

9.3.7 Procedures and Guidelines

The service supplier shall have documented operational procedures and guidelines for how to perform the inspection and how to handle the equipment. These shall include:

- two-way communication between the diver and surface,
- video recording and closed circuit television operation,
- guidance of the diver along the hull to provide complete coverage of the parts to be inspected,
- guidance for the operation and maintenance of the remote operated vehicle, if applicable.

9.3.8 Verification

The service supplier shall have PRS Surveyor's verification of each separate job, documented in the report by the attending Surveyor(s) signature.

9.4 Firms Engaged in Inspection and Maintenance of Fire Extinguishing Equipment and Fire Protection Systems

9.4.1 Extent of engagement covers inspections and maintenance of fire-protection equipment and systems, such as fixed fire extinguishing systems, portable fire extinguishers, fixed fire detection and alarm systems, and fixed gas detection systems.

9.4.2 Extent of Approval

- Service Suppliers shall have professional knowledge of fire theory, fire-fighting and fire-extinguishing appliances sufficient to perform the maintenance and/or inspections, and to make the necessary evaluations of the condition of the equipment.
- In demonstrating professional knowledge, Service Suppliers shall have an understanding of the various types of fires and the extinguishing media to be used on them.
- For fixed fire-extinguishing systems, Service Suppliers shall demonstrate an understanding of the principles involved with gas, foam, deluge, sprinkler and water-mist systems, as relevant for the approval being sought.

9.4.3 Procedures

- Service Suppliers shall have documented procedures and instructions on how to perform the servicing of the equipment and/or system. These shall either contain or make reference to the Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate, and to international requirements.

- Additionally they shall make reference to any requirements (e.g. what markings shall be appended to the equipment/system).

9.4.4 Reference Documents

The Service Supplier shall have access to the following documents:

- Manufacturer’s servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;
- Type Approval Certificates showing any conditions that may be appropriate during the servicing and/or maintenance of fire-extinguishing equipment and systems;
- SOLAS, MSC.1/Circular.1318 (*Guidelines for the Maintenance and Inspections of Fixed Carbon Dioxide Fire-Extinguishing Systems*), *International Code for Fire Safety Systems (FSS Code)*, ISO 6406 (*Periodic inspection and testing of seamless steel gas cylinders*), and any documentation specified in the authorisation or license from the equipment manufacture;
- MSC/Circ.670 (*Guidelines for the Performance and Testing Criteria and Surveys of High Expansion Foam Concentrates for fixed Fire-Extinguishing Systems*);
- MSC/Circ.798 (*Guidelines for the Performance and Testing Criteria and Surveys of Medium Expansion Foam Concentrates for fixed Fire-Extinguishing Systems*);
- MSC/Circ.799 (*Guidelines for the Performance and Testing Criteria and Surveys of Expansion Foam Concentrates for fixed Fire-Extinguishing Systems of Chemical Tankers*);
- MSC.1/Circ.1312 (*Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for fixed Fire-Extinguishing Systems as corrected by MSC/Circ.1312/Corr.1*);
- MSC.1/Circ.1432 (*Revised Guidelines for the maintenance and Inspection of Fire Protection Systems and Appliances*);
- MSC.1/Circ.1516 (*Amendments to the Revised Guidelines for the maintenance and Inspection of Fire Protection Systems and Appliances (MSC.1/Circ.1432)*);
- IMO Res. A.951(23) – *Improved Guidelines for Marine Portable Fire Extinguishers*;
- MSC.1/Circ.1370 – *Guidelines for the Design, Construction and Testing of Fixed Hydrocarbon Gas Detection Systems*;
- Guidelines adopted by IMO for fire extinguishing equipment and systems specifically intended for service by service suppliers.

9.4.5 Equipment and Facilities

9.4.5.1 General Requirements

If Service Suppliers undertake shore-based inspecting and maintenance, they shall maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and extinguishing media being stored, to ensure safe and effective working procedures.

Service Suppliers undertaking inspecting and maintenance of equipment and systems onboard shall provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

9.4.5.2 Equipment

Sufficient and appropriate spares and tools shall be available as applicable, which should include:

- Various scales to weigh items;
- Means to hydrostatically pressure test components/systems/storage bottles;
- Liquid/gas, flow meters, as appropriate;
- Pressure gauges or manometers;
- In the cases of foam concentrates and portable fire-extinguishers, chemical analysis equipment and a testing bay, respectively; and
- Specific equipment/spares as may be specified by Manufacturer;
- Level measuring equipment for bottles;
- Recharging facilities for pressurized bottles, extinguishers and cartridges.

9.5 Firms Engaged in Servicing Inflatable Liferafts, Inflatable Lifejackets, Hydrostatic Release Units, Inflatable Rescue Boats, and Marine Evacuation Systems

9.5.1 Extent of Engagement

Servicing of inflatable liferafts, inflatable lifejackets, hydrostatic release units and/or inflatable rescue boats. Servicing of marine evacuation systems

9.5.2 Equipment and Facilities

IMO Res. A.761(18) as amended by MSC.55(66) gives recommendations on conditions for the approval of servicing stations for inflatable liferafts which shall be observed as relevant. Where inflatable liferafts are subject to extended service intervals, MSC.1/Circ.1328 shall also be followed.

9.5.3 Procedures and Instructions

The supplier shall have documented procedures and instructions for how to perform service of equipment. Where inflatable liferafts are subject to extended service intervals in accordance with the requirements of SOLAS Regulation III/20.8.3, MSC.1/Circ.1328 shall be followed in addition to Resolution A.761(18) as amended by MSC.55(66).

9.5.4 The supplier shall provide evidence that it has been authorised or licensed to service the particular makes and models of equipment for which approval is sought by the equipment's manufacturer.

9.5.5 Reference Documents

The Service Supplier shall have access to the following documents:

- IMO - Resolution A.761(18) - Recommendation on Conditions for the Approval of Servicing Stations for Inflatable Liferafts - (adopted on 4 November 1993), amended by Resolution MSC.55(66);
- IMO - Resolution MSC.55(66);
- IMO – MSC.1/Circ.1328 – Guidelines for the Approval of Inflatable Liferafts Subject to Extended Service Intervals Not Exceeding 30 Months;
- Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;
- Type Approval Certificates, showing any conditions that may be appropriate during the servicing and/or maintenance of inflatable liferafts, inflatable rescue boats, inflatable lifejackets, and hydrostatic release units;
- LSA Code/Chap.IV, 1995 SOLAS Conference Resolution 4 regarding marine evacuation systems.

9.6 Firms Engaged in inspections and Testing of Radio Communication Equipment

9.6.1 Extent of Engagement

- Surveys, inspection, testing, and/or measurement of radio equipment aboard ships or mobile offshore units for compliance with SOLAS regulations;
- Annual testing of 406 MHz satellite EPIRBs for compliance with SOLAS Regulation IV/15.9;
- The principles of this section also apply to Service Suppliers involved in inspection, performance testing and maintenance of Automatic Identification Systems (AIS). The Service Supplier shall be familiar with the equipment with which it will be involved, such as being a service agent for the equipment manufacturer.

9.6.2 Reference Documents

The supplier shall have access to the following documents:

- SOLAS 1974 as amended;
- IMO Res. A.789(19): Specification on the survey and certification functions of recognised organisations acting on behalf of the administration;
- MSC/Circ.1040/Rev.1 – Guidelines on Annual Testing of 406 MHz Satellite EPIRBs;
- MSC.1/Circ.1252 – Guidelines on Annual Testing of the Automatic Identification System (AIS);

- SN/Circ.227, SN/Circ.227/Corr.1 and 245 – Guidelines for the Installation of a Shipborne Automatic Identification System (AIS) and amendments thereto;
- ITU Radio Regulations;
- IMO Performance Standards for the equipment for which the Service Supplier is approved;
- Flag State Administration requirements;
- Relevant parts, if any, of the PRS Rules and Guidelines.

9.6.3 Supervisor

The supervisor shall have minimum two years education from a technical school, experience as inspector, and should preferably hold a General Operator's Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC), recognised by the ITU, to operate or test radio transmitters. He shall be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

9.6.4 Radio inspector

The inspector performing the inspection shall have passed the internal training of the supplier in Radiotelephony, GMDSS, and initial and renewal surveys, as applicable. The inspector shall also have at least one year's technical school training or as alternative hold evidence that he followed a technical course approved by the relevant Administration, at least one year's experience as an assistant radio inspector and should preferably hold an appropriate National Radio Operators Certificate, recognised by the ITU, such as a GMDSS General Operator's Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC). He shall be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

9.6.5 Equipment and facilities

9.6.5.1 The supplier shall have the major and auxiliary equipment required for correctly performing the inspection. A record of the equipment used shall be kept. The record shall contain information on manufacturer and type of equipment, and a log of maintenance and calibrations.

9.6.5.2 A standard which is relevant to the radio equipment to be tested shall be available for the equipment and shall be cited in the inspection report.

9.6.5.3 For equipment employing software in conjunction with the testing/examination, this software shall be fully described and verified.

9.6.6 Minimum required instruments:

- Equipment for measuring frequency, voltage, current and resistance;
- Equipment for measuring output and reflect effect on VHF and MF/HF;
- Equipment for measuring modulation on MF/HF and VHF (AM, FM, PM);
- Acid tester for checking specific gravity of lead batteries;
- Tester for checking of correct output from Free-Float Satellite EPIRB;
- Equipment for testing the performance of Automatic Identification Systems (AIS).

9.6.7 Procedures and instructions

The supplier shall have documented procedures and instructions for how to perform testing and examination of radio equipment. Procedures and instructions for operating of each item of the testing/inspection equipment shall also be kept and be available at all times.

9.7 Firms engaged in inspection and maintenance of self-contained breathing apparatus

9.7.1 Extent of engagement – inspections and maintenance of self-contained breathing apparatus, Emergency Escape Breathing Devices (EEBD).

9.7.2 Extent of Approval

The supplier shall document and demonstrate that it has knowledge of the equipment and systems sufficient to perform the inspections and testing of self-contained breathing apparatus to identify standards and to make the necessary evaluation of the condition of the equipment.

In demonstrating professional knowledge, Service Suppliers shall have an understanding of the operational requirements involved with self-contained breathing apparatus and how these shall be maintained.

Additionally, Service Suppliers shall demonstrate the necessary safety requirements applicable to such equipment.

9.7.3 Procedures

Service Suppliers shall have documented procedures and instructions on how to perform the servicing of the equipment and/or system. These shall either contain or make reference to the Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;

Additionally they shall make reference to any requirements (e.g. what markings shall be appended to the equipment/system) and how they should be applied.

9.7.4 Reference Documents – The Service Supplier shall have access to the following documents:

- Manufacturers' servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;
- *Type Approval Certificates* showing any conditions which may be appropriate during the servicing and/or maintenance of self-contained breathing apparatus.

9.7.5 Equipment and Facilities

9.7.5.1 General Requirements

- If Service Suppliers undertake shore-based inspecting and maintenance, they shall maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and pressurised bottles being stored, to ensure safe and effective working procedures;
- Service Suppliers undertaking inspecting and maintenance of equipment and systems onboard shall provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

9.7.5.2 Equipment

Sufficient and appropriate spares and tools shall be available for repair, maintenance and servicing of self-contained breathing apparatus in accordance with the requirements of the Manufacturers. These shall include, as required by the self-contained breathing apparatus equipment and/or systems:

- Various scales to weigh items;
- Means to hydrostatically pressure test components/systems/storage bottles;
- Flow meters; and
- Pressure gauges or manometers;
- Equipment for checking air quality;
- Recharging facilities for breathing apparatus.

9.8 Firms Engaged in Examination of Ro-Ro ships Bow, Stern, Side and Inner Doors

9.8.1 Extent of Engagement

Inspection of securing and locking devices, hydraulic operating system, electric control system for the hydraulics, electric indicator systems, and supporting, securing and locking devices and tightness testing.

9.8.2 Quality Management System Requirements

The service supplier shall be certified to the most current version of ISO 9001 series.

9.8.3 Supervision

In addition to 5.2.3 the requirement to have had a minimum of two years experience as operator/technician/inspector within the activity, a Supervisor shall have a minimum two years related education from a technical school.

9.8.4 Personnel Training

Operators performing non-destructive testing shall be qualified to a recognized national or international industrial NDT standards for the methods used.

9.8.5 Reference Documents

The service supplier shall have access to the following reference documents:

- IMO – International Convention on the Safety of Life at Sea (SOLAS) 74/78 as amended,
- ISO 9000 Quality systems – model for quality assurance in production installation and servicing,
- IACS UR Z24 – Survey Requirements for shell and Inner Doors of Ro-Ro ships.

9.8.6 Required Equipment

9.8.6.1 For inspection of supporting, securing and locking devices, hinges and bearings:

- equipment for measuring clearances (i.e. feeler gauges, vernier callipers, micrometers),
- non-destructive testing (i.e. dye penetrant, magnetic particle inspection).

9.8.6.2 For tightness testing:

- ultrasonic leak detector or equivalent.

9.8.6.3 For inspection of hydraulic operating system:

- pressure gauges,
- particle counter for analysing the quality of hydraulic fluid.

9.8.6.4 For inspection of electric control system and indication system:

- digital multi-meter,
- earth fault detector.

9.8.7 Procedures and Instructions

The service supplier shall have access to drawings and documents, including the Operating and inspection manual,

The service supplier shall have access to the service history of doors,

The service supplier shall use, complete and sign a checklist which has been found acceptable by PRS.

9.9 Firms Engaged in Annual Performance Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR)

9.9.1 Extent of Engagement

Testing and servicing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in accordance with SOLAS Chapter V Regulation 18.8 and IMO - MSC.1/Circular.1222 – Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR), as applicable.

9.9.2 Extent of Approval

9.9.2.1 The supplier shall provide evidence that he has been authorised or licensed by the equipment's manufacturer to service the particular makes and models of equipment for which approval is sought.

9.9.2.2 Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has elected to apply IMO - MSC.1/Circular.1222 – Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the following applies:

- The Manufacturer is responsible for appointing Manufacturer’s Authorised Service Stations to perform annual performance testing;
- The Manufacturer is required to be an Approved Service Supplier and shall satisfy the requirements for Service Suppliers engaged in annual performance testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR), as applicable;
- The Manufacturer’s Authorised Service Station is not required to be an Approved Service Supplier;
- The Manufacturer shall demonstrate that IMO - MSC.1/Circular.1222 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) is applied in its entirety.

9.9.3 Procedures

9.9.3.1 The Service Supplier shall have documented procedures and instructions.

9.9.3.2 Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has selected to apply IMO - MSC.1/Circular.1222 – Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the following applies:

- The Manufacturer shall have documented procedures for the assessment and authorisation of Manufacturer’s Authorised Service Stations who perform annual performance testing;
- The Manufacturer shall have documented procedures for the review of Manufacturer’s Authorised Service Stations annual performance test reports, analysis of the Voyage Data Recorder (VDR) and Simplified Voyage Data Recorder (S-VDR) 12 hour log and the issue of annual performance test certificates to the Owner/Operator;
- The Manufacturer shall maintain a list of Manufacturer’s Authorised Service Stations that can be accessed (by any available means, e.g. via a nominated contact point or from the Manufacturer’s website) upon request.

9.9.4 Reference Documents

9.9.4.1 The Service Supplier shall have access to the following documents:

- IMO – *International Convention on the Safety of Life at Sea (SOLAS)*, 74/78, Ch V, Reg 18.8. – Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder
- IMO – MSC.1/Circular.1222 – *Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR)* – (11 December 2006);
- IMO – Resolution A.861(20) (adopted on 27 November 1997) as amended by IMO Resolution MSC.214(81) and revised by IMO Resolution MSC.333(90) – *Performance Standards for Shipborne Voyage Data Recorders (VDRs)*;
- IMO – Resolution MSC.163(78) – *Performance Standards for Shipborne Simplified Voyage Data Recorders (S-VDRs)* – (adopted on 17 May 2004), as amended by IMO Resolution 214(81).

9.9.4.2 The Service Supplier shall have access to applicable industry performance standards, e.g.:

- IEC 61996 – *Maritime navigation and radiocommunication equipment and systems – Shipborne voyage data recorder (VDR)*;
- IEC 61996–2 – *Maritime navigation and radio communication equipment and systems – Shipborne voyage data recorder (VDR) – Part 2: Simplified voyage data recorded (SVDR) – Performance requirements, method of testing and required test results.*

9.9.4.3 The Service Supplier shall also have access to any documentation specified in the authorisation or license from the equipment manufacturer.

9.9.5 Equipment and Facilities

In addition, the Service Supplier shall have equipment as specified in the authorisation or license from the equipment Manufacturer.

9.9.6 Reporting – Test Report

9.9.6.1 The Service Supplier shall issue a certificate of compliance as specified in the International Convention on Safety of Life at Sea (SOLAS 1974), as amended, Ch V, Reg 18.8.

9.9.6.2 Annual Performance Test of VDR and S-VDR shall be recorded in the form of the model test report given in the Appendix to MSC.1/Circular.1222, signed and stamped by the Service Supplier and attached to the annual performance test certificate.

9.9.6.3 Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has selected to apply IMO - MSC.1/Circular.1222 – Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the Manufacturer shall make arrangements for the following:

- Review of the Manufacturer’s Authorised Service Station annual performance test report;
- Analysis of the recorder’s 12 hour log;
- Checking of the master record/database for the recorder.

9.9.6.4 Annual performance test certificate is issued to the Owner/Operator within 45 days of the annual performance test completion.

9.10 Firms Engaged in Inspections of Low-location Lighting Systems Using Photo Luminescent Materials and Evacuation Guidance Systems Used as an Alternative to Low-Location Lighting Systems

9.10.1 Extent of engagement

Luminance measurements on board ships of low location lighting systems using photo luminescent materials.

9.10.2 Operators

The operator shall have the following qualifications:

- Have adequate knowledge of the applicable international requirements (namely SOLAS reg. II-2/13.3.2.5, IMO Res. A.752(18) - Guidelines for the Evaluation, Testing and Application of Low-Location Lighting on Passenger Ships, ISO 15370-2010, FSS Code Chapter 11);
- Be able to document theoretical and practical training onboard in using equipment specified.

9.10.3 Equipment

The measuring instrument shall incorporate a fast-response photometer head with CIE (International Commission on Illumination) photopic correction and have a measurement range of at least 10^{-4} cd/m² to 10 cd/m².

9.10.4 Procedures

Documented work procedures shall at least contain information on inspection preparation, selection and identification of test locations.

9.10.5 Reporting

The report shall conform to Annex C of ISO 15370-2010.

9.10.6 Verification

The supplier shall have PRS Surveyor's verification of each separate job, documented in the report by the attending Surveyor's signature.

9.10.7 Reference Documents

The Service Supplier shall have access to the following documents:

- IMO – *International Convention on the Safety of Life at Sea (SOLAS)*, 74/78 Ch II-2, Pt D, Reg 13.3.2.5 – *Marking of escape routes*;
- IMO – *Fire Safety Systems (FSS Code)*, Ch 11 – Low-location lighting systems;
- IMO – Resolution A.752(18) – *Guidelines for the Evaluation, Testing and Application of Low-Location Lighting on Passenger Ships* - (adopted on 4 November 1993);
- ISO 15370:2010 – *Ships and marine technology – Low-location lighting on passenger ships – Arrangement*;
- MSC/Circ.1168 – *Interim guidelines for the testing, approval and maintenance of evacuation guidance systems used as an alternative to low-location lighting systems*.

9.11 Firms Engaged in Sound Pressure Level Measurements of Public Address and General Alarm System on Board Ship

9.11.1 Extent of engagement

Sound pressure level measurements of public address and general alarm systems on board ships.

9.11.2 Operators

The operator shall have the following qualifications:

- Have adequate knowledge of the applicable international requirements (SOLAS Reg. III/4 and III/6, LSA CODE Chapter VII/7.2, IMO Code on alarms and indicators, 1995);
- Be able to document theoretical and practical training onboard in using equipment specified.

9.11.3 Equipment

The measuring instrument shall be an integrating sound level meter with frequency analyser capabilities complying with IEC (International Electrotechnical Commission) 60651 and IEC 61672, type 1 precision class with, at least an A-weighting frequency response curve and 1/3 octave and 1 octave band filters, complying to IEC 61260, as appropriate for the measurements to be performed. In addition microphones shall be of the random incidence type, complying with IEC 60651.

9.11.4 Procedures

Documented work procedures are at least to contain information on inspection preparation, calibration, selection and identification of test locations.

9.11.5 Reporting

The report shall describe, as a minimum, the environmental conditions of the tests and, for each test location, the ambient noise level or the speech interference level, as appropriate for the measurements to be performed. The report shall conform to any other specific requirement of PRS.

9.11.6 Verification

The supplier shall have the Surveyor's verification of each separate job, documented in the report by his signature.

9.11.7 Reference documents

The Service Supplier shall have access to the following documents:

- *SOLAS 74/78*, Ch III, Pt A, Reg 4 – *Evaluation, testing and approval of life-saving appliances and arrangements*;
- *SOLAS 74/78*, Ch III, Pt B, Reg 6 – *Communications*;

- *International Life-Saving Appliance (LSA) Code*, Ch VII, Reg 7.2 – *General alarm and public address system*;
- *IMO – Code on Alarms and Indicators*, 1995 as amended;
- IEC 60651 (2001-10) – *Sound level meters*;
- IEC 61672 – *Electroacoustics – Sound level meters*;
- IEC 61260 – *Electroacoustics – Octave-band and fractional-octave-band filters*.

9.12 Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82) as amended and the requirements of IACS UI SC223 and/or Resolution MSC.288(87) as amended

9.12.1 Extent of engagement

Testing of coatings systems according to IMO Resolution MSC.215(82), as amended by IMO MSC.1/Circ.1381 and amended by IMO Resolution 341(91) and IACS UI SC223 and/or MSC.288(87), as corrected by IMO MSC.1/Circ.181 and amended IMO Resolution 341(91).

9.12.2 Laboratories

The laboratory shall provide to the PRS the following information:

- a detailed list of the Laboratory test equipment for the coating approval according to the IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended,
- a detailed list of reference documents comprising a minimum those referred to in IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended for the coating approval,
- details of test panel preparation, procedure of test panel identification, coating application, test procedures and a sample test report,
- details of exposure method and site for weathering primed test panels,
- a sample daily or weekly log/form for recording test conditions and observations including unforeseen interruption of the exposure cycle with corrective actions,
- details of any sub-contracting agreements (if applicable),
- comparison test report with an approved coating system or laboratory, if available.

9.12.3 Reporting

The test report shall be based on the guidelines given in PRS *Publication No. 87/P*, Annex 1 and Annex 2.

9.12.4 Test Laboratory Inspection

Inspection of the test laboratory shall be based on the requirements of Chapter 5 of this *Publication* and standards listed in IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended for the coating approval.

9.13 Firms Engaged in Servicing and Maintenance of Lifeboats, Launching Appliances, On-load Release Gear and Davit-Launched Liferaft Automatic Release Hook

9.13.1 Extent of engagement

Servicing and maintenance of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks.

9.13.2 Extent of Approval

9.13.2.1 The contents of this procedure apply equally to manufacturers when they are acting as Service Suppliers.

9.13.2.2 Any Service Supplier engaged in the thorough examination, operational testing, repair and overhaul of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks performed in accordance with SOLAS regulation III/20 shall be qualified in these operations for each make and type of equipment for which they provide the service, and provide

manufacturers documentary evidence that they have been so authorized or they are certified in accordance with an established system for training and authorization in accordance with MSC.1/Circ.1277, as amended.

9.13.2.3 In cases where an equipment manufacturer is no longer in business or no longer provides technical support, Service Suppliers may be authorised for the equipment on the basis of prior authorization for the equipment and/or long term experience and demonstrated expertise as an authorized service provider.

9.13.3 Qualifications and Training of Personnel

Service Suppliers shall be trained and qualified in the operations for which they are authorised, for each make and type of equipment for which they provide the service. Such training and qualification shall include, as a minimum.

9.13.3.1 Employment and documentation of personnel certified in accordance with a recognized national, international or industry standard as applicable, or an equipment manufacturer's established certification program. In either case, the certification program shall be based on the guidelines in the appendix for each make and type of equipment for which service is to be provided.

9.13.3.2 The education and training for initial certification of personnel shall be documented and address, as a minimum:

- causes of lifeboat accidents;
- relevant rules and regulations, including International Conventions;
- design and construction of lifeboats, including on-load release gear and launching appliances;
- education and practical training in the procedures specified in annex 1 of MSC.1/Circ.1206/Rev.1 for which certification is sought;
- detailed procedures for thorough examination, operational testing, repair and overhaul of lifeboats, launching appliances and on-load release gear, as applicable; and
- procedures for issuing a report of service and statement of fitness for purpose based on MSC.1/Circ.1206/Rev.1 (annex 1, paragraph 15).

9.13.3.3 The education and training for the personnel shall include practical technical training on actual inspection and maintenance using the equipment (lifeboats, launching appliances and/or on-load release gear) for which the personnel are to be certified. The technical training shall include disassembly, reassembly, correct operation and adjustment of the equipment. Classroom training shall be supplemented by field experience in the operations for which certification is sought, under the supervision of an experienced senior certified person.

9.13.3.4 At the time of initial certification and at each renewal of certification, the service supplier shall provide documentation to verify personnel's satisfactory completion of a competency assessment using the equipment for which the personnel are certified.

9.13.3.5 The Service Supplier shall require refresher training as appropriate to renew the certification.

9.13.4 Reference Documents

The Service Supplier shall have access to the following documents:

- IMO – MSC.1/Circ.1206/Rev.1, as amended, Measures to Prevent Accidents with Lifeboats;
- IMO – MSC.1/Circ.1277, as amended, Interim Recommendation on Conditions for Authorization of Service Providers for Lifeboats, Launching Appliances and On-Load Release Gear;
- IMO – Resolution A.689(17), Recommendation on Testing of Life-saving Appliances and, for Life-saving Appliances Installed on Board on or after 1 July 1999, Resolution MSC.81(70), Revised Recommendation on Testing of Life-Saving Appliances;
- For servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of the equipment manufacturer's specifications and instructions;
- Type Approval certificate showing any conditions that may be appropriate during the servicing and/or maintenance of lifeboats, launching appliances and on-load release gear.

9.13.5 Equipment and Facilities

The Service Supplier shall have access to the following:

- Sufficient tools, and in particular any specialized tools specified in the equipment manufacturer’s instructions, including portable tools as needed for work to be performed on board ship;
- Access to sufficient materials, spare parts and accessories as specified by the equipment manufacturer for repairing lifeboats, launching appliances and on-load release gear, as applicable;
- For servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of genuine replacement parts as specified or supplied by the equipment manufacturer.

9.13.6 Reporting

The report shall conform to the requirements of MSC.1/Circ.1206/Rev.1 (annex 1, paragraph 15). When repairs, thorough examinations and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose shall be promptly issued by the Service Supplier.

9.14 Firms Engaged in Measurements of Noise Level on Board Ships

9.14.1 Extent of engagement

Sound pressure level measurements onboard Ship.

9.14.2 Supervisor

The supervisor shall have a minimum of 2 years of experience as an operator in sound pressure level measurements.

9.14.3 Operators

The operator shall have the following qualifications:

- knowledge in the field of noise, sound measurements and handling of measurement equipment;
- adequate knowledge of the applicable international requirements (SOLAS Regulation II-1/3-12, as amended, and IMO Code on noise levels onboard Ships, as amended);
- at least 1 year’s experience, including participation in a minimum of 5 measurement campaigns as an assistant operator;
- training concerning the procedures specified in IMO Code on Noise Levels on Board Ships;
- be able to document theoretical and practical training onboard in using a sound level meter.

9.14.4 Equipment

9.14.4.1 Sound Level Meters

Measurement of sound pressure levels shall be performed using precision integrating sound level meters. Such meters shall be manufactured to IEC 61672-1(2002-05)¹, as amended, type/class⁴ standard as applicable, or to an equivalent standard acceptable to the Administration⁵.

9.14.4.2 Octave Filter Set

When used alone, or in conjunction with a sound level meter, as appropriate, an octave filter set shall conform to IEC 61260 (1995)⁶, as amended, or an equivalent standard acceptable to the Administration.

9.14.4.3 Sound Calibrator

Sound calibrators shall comply with the standard IEC 60942 (2003-01), as amended, and shall be approved by the manufacturer of the sound level meter used.

⁴ Recommendation for sound level meters.

⁵ Sound level meters class/type 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

⁶ Octave-band and fractional-octave-band filters

9.14.4.4 Calibration

Sound calibrator and sound level meter shall be verified at least every two years by a national Standard laboratory or a competent laboratory accredited according to ISO 17025 (2005), as amended. A record with a complete description of the equipment used shall be kept, including a calibration log.

9.14.4.5 Microphone Wind Screen

A microphone wind screen shall be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement. The wind screen shall not affect the measurement level of similar sounds by more than 0.5 dB(A) in "no wind" conditions.

9.14.5 Procedures and Instructions

9.14.5.1 The supplier shall have documented procedures and instructions to perform service of the equipment.

Documented work procedures shall at least contain information on inspection preparation, selection and identification of sound level measurement locations, calibration checks and report preparation.

9.14.5.2 The supplier shall have access to the following documents:

- SOLAS 1988, as amended (Reg.II-1/3-12);
- Resolution A.468(XII) and IMO Resolution MSC.337(91) – *Code on noise levels on board ships*;
- Resolution A.343(IX) Recommendation on methods of measuring noise levels at listening posts;
- PRS Rules and Guidelines.

9.14.6 Reporting

A noise inspection report shall be made for each ship. The report shall comprise information on the noise levels in the various spaces on board. The report shall show the reading at each specified measuring point. The points shall be marked on a general arrangement plan, or on accommodation drawings attached to the report, or shall otherwise be identified.

The format for noise inspection reports is set out in appendix 1 of IMO *Code on Noise Levels onboard Ships* and may conform to any other specific requirement of PRS (refer to IMO circular MSC.337(91)).

9.14.7 Verification

The supplier shall have the Surveyor's verification of each separate job, documented in the report by his signature.

9.15 Firms Engaged in Tightness Testing Primary and Secondary Barriers of Gas Carriers with Membrane Cargo Containment Systems for Vessels in Service

9.15.1 Extent of Engagement

Firms performing the following:

- global vacuum testing of primary and secondary barriers,
- acoustic emission testing (AT),
- thermographic testing.

9.15.2 Requirements for Firms Engaged in Global Testing of Primary and Secondary Barriers

9.15.2.1 Testing procedures – testing shall be performed in accordance with cargo containment system designer's procedures as approved by the PRS.

9.15.2.2 Authorization – the service supplier shall be authorized by the system designer to perform the testing.

9.15.2.3 Equipment – equipment shall be maintained and calibrated in accordance with recognized national or international industrial standards.

9.15.2.4 Reporting – the report shall contain the following:

- date of testing,
- identity of test personnel,
- vacuum decay data for each tank,
- Summary of test results.

9.15.3 Requirements for Firms Engaged in Acoustic Emission Testing (AT)

9.15.3.1 Testing procedures – the service supplier shall have documented procedures based upon recognized national or international industrial standards to perform ultrasonic leak test using AT sensors for the secondary barrier of membrane cargo containment systems. The procedures shall include details of personnel responsibilities and qualification, instrumentation, test preparation, test method, and signal processing, evaluation and reporting.

Note: The differential pressure during testing shall not exceed the containment system designers' limitations.

9.15.3.2 Supervisor – the responsible supervisor shall be certified to a recognised national or international industrial standard (e.g. Level II ISO 9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

9.15.3.3 Operators – the operators performing the acoustic emission testing (AT) shall be certified to a recognized national or international industrial standard (e.g. Level I ISO 9712 as amended or SNT-TC-1A as amended) and shall have adequate knowledge of ship structures sufficient to determine sensor placement.

9.15.3.4 Equipment – equipment shall be maintained and calibrated in accordance with recognized national or international industrial standards or equipment manufacturer's recommendations.

9.15.3.5 Evaluation of acoustic emission testing (AT) – shall be performed by the supervisor or individuals certified to a recognized or international industrial standard (e.g. Level II ISO 9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

9.15.3.6 Reporting – the report shall contain the following:

- date of testing,
- supervision and operator(s) certifications,
- description of time and pressure of each cycle of test,
- list and sketch detailing location of possible defects.

9.15.4 Requirements for Firms Engaged in Thermographic Testing

9.15.4.1 Testing procedures – testing shall be performed in accordance with cargo containment system designer's procedures as approved by the PRS.

9.15.4.2 Authorization – the service supplier shall be authorized by the system designer to perform the testing.

9.15.4.3 Supervisor – the responsible supervisor shall be certified to a recognised national or international industrial standard (e.g. Level II ISO 9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing. Certification by the service supplier is not permitted and shall be obtained through an independent certification body.

9.15.4.4 Operators – the operators performing the imaging shall be certified to a recognized national or international industrial standard (e.g. Level I ISO 9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing and shall have adequate knowledge of ship structures sufficient to determine position for each identified image, and of the containment system to understand the basis of the testing. Certification by the service supplier is not permitted and shall be obtained through an independent certification body.

9.15.4.5 Equipment – thermal cameras and sensors shall be in accordance with the system designer's procedures with regards to sensitivity, accuracy and resolution.

Equipment shall be in accordance with recognized standards (IEC, etc.) with regards their safety characteristics for the use in hazardous areas (in gas explosive atmosphere), maintained and calibrated in accordance with the marker’s recommendations.

9.15.4.6 Evaluation of thermographic images – shall be performed by the supervisor or individuals certified to a recognized or international industrial standard (e.g. Level II ISO 9712 as amended or ANT-TC-1A as amended) with additional certification in infrared/thermal testing. Certification by the service supplier is not permitted and shall be obtained through an independent certification body.

9.15.4.7 Reporting – the report shall contain the following:

- date of testing,
- supervision and operator(s) certifications,
- differential pressures of all phases,
- list and sketch detailing location of thermal indications,
- thermographic images of all phases of testing for thermal indications,
- evaluation of thermal images indicating possible leaks.

9.16 Service Suppliers Engaged in Assembly and Maintenance Involving Plastics’ Welding

9.16.1 Scope of Services Rendered

Welding, including solvent welding, involves the following processes:

- hot gas welding: round nozzle, high speed nozzle, wedge as well as extrusion welding,
- heated tool welding: butt, saddle, socket, wedge,
- electrofusion welding: socket, saddle.

The following products are subject to welding:

- sheet,
- pipe,
- fittings,
- lining membrane,

made of the following groups of materials in accordance with standard PN-EN 13067, see Table 9.16.1.

**Table 9.16.1
Plastic material groups**

For sheets, pipes and fittings	Group 1	PVC (PVCU, ABS, PC)	PVC – polyvinyl chloride PVC-U – PCV-C
	Group 2	PP	PP – polypropylene
	Group 3	PE (PE, PB)	PE – polyethylene PB – polybutylene
	Group 4	PVDF	PVDF – polivinylidene fluoride
	Group 5	ECTFE PFA, FEP	ECTFE – ethylene – chlorotrifluoroethylene copolymer ethylene / chlorotrifluoroethylene PFA – perfluoroalkoxy alkane FEP – copolymer hexafluoropropylene / tetrafluoroethylene
For lining membranes	Group 6	PVP-P	PVP-P– Polyvinyl pyrrolidone
	Group 7	PE	PE – polyethylene
	Group 8	ECB	ECB – ethylene-copolymer-bitumen
	Group 9	PP	PP – polypropylene

9.16.2 Quality Management System

Service suppliers shall have a quality management system certified in accordance with standard PN-EN ISO 9001.

9.16.3 Personnel Register

Service suppliers shall maintain the register of personnel qualified to perform welding operations with plastics. The register shall contain information on their age, qualifications, training/apprenticeship and experience in rendering the relevant services as well as the expiry date of the welder qualification certificates with respect to the service supplier's scope of approval.

9.16.4 Supervision

Supervisors shall – in addition to the fulfilment of the requirements specified in 5.2.3 – shall have valid welder's qualification certificate for plastic welding operations and at least 2-year documented professional experience in welding of plastics of the particular material group using the supervised welding procedures. Supervisors shall also possess the knowledge of relevant standards and the implemented in-house welding procedures.

9.16.5 Technical Personnel

Technical personnel involved in the plastic welding operations shall:

- have passed the qualification test for the welding of plastics;
- have welders qualification certificates to perform certain tasks;
- complete an in-house training course held by the supervisory personnel in respect of the welding operations and techniques implemented by the service supplier.

9.16.6 Technical Arrangements and Instrumentation

Service suppliers shall have implemented respective manufacturing, assembly, repair and modernisation processes for the products made of plastics. They shall have adequate basic and auxiliary arrangements and instrumentation to ensure that the manufacturing, assembly, repair and modernisation operations are performed in accordance with the approved technology. Service suppliers shall have a list of such arrangements and instrumentation containing the information of their types, manufacturers and records regarding their maintenance and calibration.

Where the arrangements use software during tests/measurements, such software shall be described in sufficient detail and validated.

9.16.7 Procedures

Documented working procedures shall include information at least on the particular welding technique for which the approval is sought.

9.16.8 Verification

Service supplier shall have the verification of each particular procedure confirmed by PRS Surveyor's signature on the report.

9.16.9 Service Supplier's Inspection

Service supplier is subject to the inspection in accordance with the requirements specified in sub-chapter 5.3 of this *Publication*.
