

# *Polski Rejestr Statków*

## **RULES FOR CLASSIFICATION AND CONSTRUCTION OF FLOATING DOCKS**

### **PART I CLASSIFICATION REGULATIONS**

2017  
February



GDĄSK

## **RULES FOR CLASSIFICATION AND CONSTRUCTION OF FLOATING DOCKS**

developed and published by Polski Rejestr Statków S.A., hereinafter referred to as PRS, consist of the following parts:

- Part I – Classification Regulations
- Part II – Hull and Hull Equipment
- Part III – Stability and Freeboard
- Part IV – Fire Protection
- Part V – Machinery Installations
- Part VI – Electrical Equipment and Automatic Control
- Part VII – Cranes.

With respect to materials and welding, the requirements specified in the *Rules for the Classification and Construction of Sea-Going Ships, Part IX – Materials and Welding*, apply.

*Part I – Classification Regulations – February 2017*, was approved by the Executive Board of PRS on 30 January 2017 and comes into force on 1 February 2017.

# CONTENTS

	Page
<b>1 General</b> .....	5
1.1 Scope of Application .....	5
1.2 Definitions .....	5
<b>2 Class of Docks</b> .....	5
2.1 General Provisions .....	5
2.2 Main Symbol of Class .....	6
2.3 Additional Marks in the Symbol of Class .....	6
2.4 Amendments to Marks in the Symbol of Class .....	7
2.5 Additional Descriptive Information .....	7
2.6 Scope of Classification .....	7
<b>3 Classification Surveys of Docks in Service</b> .....	8
3.1 General .....	8
3.2 Scope of Surveys .....	8
<b>4 Technical Documentation of Dock</b> .....	12
4.1 Basic Survey Documentation of Dock under Construction .....	12
4.2 Basic Survey Documentation of Dock under Modification .....	14
4.3 Workshop Documentation of Dock under Construction .....	14



## 1 GENERAL

### 1.1 Scope of Application

**1.1.1** These *Rules* Apply to steel floating docks and may, where relevant, be applicable to shiplifts and floor pontoons.

**1.1.2** Provisions concerning the scope of PRS supervision activities and liability, the manner, procedure and forms of the supervision performance, technical documentation approval as well as types of documents being issued are contained in separately published by PRS – *Supervision Activity Regulations*, published by PRS separately.

**1.1.3** This *Part* of the *Rules* applies to docks both under construction and in service.

**1.1.4** Irrespective of the fulfilment of the requirements of these *Rules*, attention shall be paid to the necessity to fulfil the requirements of the Administration of the country where the dock will be operated, especially with respect to the technical equipment and installations not being subject to classification.

### 1.2 Definitions

Definitions of general terminology used in the *Rules* are contained in *Part I – Classification Regulations*.

In this *Part* of the *Rules*, the following definitions have been adopted:

*Rules* – the *Rules for Classification and Construction of Floating Docks*.

**Floating dock (hereinafter „dock”)** – type of pontoon having U-shaped transverse section and floodable buoyancy chambers intended for taking ships out of water and their dry-docking.

**Additional requirements** – requirements which are not included the *Rules* but are connected with the classification activities of PRS. These requirements are contained in PRS publications and supervisory information or are subject to PRS agreement with the owners and shipyards.

**Withdrawal of class** – this means that the conditions occurred to preclude the class from being maintained and whose elimination is impossible or would involve a prolonged classification procedure.

**Suspension of class** – this means that the temporary conditions occurred either to preclude the class from being maintained or to cease spontaneously or to be rectified soon or would not involve a prolonged classification procedure.

## 2 CLASS OF DOCK

### 2.1 General Provisions

**2.1.1** PRS may assign a class to a dock constructed under PRS survey as well as assign, renew or reinstate a class to a dock in service.

**2.1.2** Assignment, renewal or reinstatement of class means that the dock is found by PRS to comply fully or sufficiently with the relevant *Rules* in force.

**2.1.3** PRS issue the *Class Certificate of Floating Dock* as a proof of the assignment or renewal of the class to dock and respective records are entered in the *Register*.

**2.1.4** The class is assigned or renewed for for a 5-year period, but in exceptional circumstances at the Owner’s request the validity of the *Class Certificate of Floating Dock* may be extended by up to 3 months beyond the 5-year period subject to PRS consent in each particular case. **For this purpose PRS may require an occasional survey of the dock.**

In technically justified cases, e.g. considering:

- the dock age,
- actual good and efficient condition of hull has been found,
- wear of machinery and electrical equipment,
- necessity to extend the scope of survey up to the scope of the class maintenance survey,

PRS may assign or renew class for a period of two years or one year indicating this by a respective mark in the symbol of class.

**2.1.5** Class is assigned to dock for its service in the particular harbour area.

**2.1.6** If the dock has been constructed in the yard remote from the location of its intended service and is intended to be towed through the open sailing region, then the class will be assigned to such a dock after the dock has arrived at its destination and after the survey has been performed. The scope of such a survey is determined by PRS in each particular case.

**2.1.7** For the dock to be towed through the open sailing region, the towing conditions shall be submitted to PRS for approval.

**2.1.8** The class is suspended in the following cases:

- .1 after the dock failure – class may be reinstated only following the positive conclusion from PRS survey, to which the dock shall be reported immediately after the failure occurrence;
- .2 unless the dock, its machinery, equipment and fittings are submitted to the periodical survey in due time, as required by the *Rules*;
- .3 after the constructional and service conditions specified in the *Class Certificate of Floating Dock* have been exceeded;
- .4 unless the recommendations made by PRS have been implemented in due time;
- .5 unless the Owner made payments for PRS services for the particular dock.

**2.1.9** The class is withdrawn in the following cases:

- .1 after it has expired;
- .2 after unauthorised by PRS constructional alterations have been made to the hull, superstructures, machinery and installations which are subject to the requirements of the respective *Rules*;
- .3 after the dock has been broken up for scrap;
- .4 at the Owner's written request;
- .5 the class has been suspended for more than 6 months.

## **2.2 Main Symbol of Class**

**2.2.1** The main symbol of class of dock constructed under PRS survey consist of the following marks:

**\* d K**

**2.2.2** If a dock has been built under the survey of another classification society and subsequently PRS class is assigned to it, then such a dock is assigned the following symbol of class:

**d K**

**2.2.3** If a dock has not been built under the survey of another classification society and subsequently PRS class is assigned to it, then the symbol of class is put in brackets:

**(d K)**

**2.2.4** The symbols of class mentioned in paragraphs from 2.2.1 to 2.2.3 mean that the dock is fit for its intended service within the harbour without the right to be towed elsewhere.

## **2.3 Additional Marks in the Symbol of Class**

**2.3.1 Marks of Limited Period of Class Validity – <2, <1**

**2.3.1.1** If the necessity to shorten the class validity period (see 2.1.4) is found during the survey, then the main symbol of class of dock in service or dock to be classed with PRS is followed by a respective mark of limited class validity:

- < 2 – for class limited to 2 years,
- < 1 – for class limited to 1 year.

**2.3.1.2** Docks assigned class or renewed class for 5 years receive no additional mark in the symbol of class.

## **2.3.2 Mark of Lifting Appliances Fitted – UD**

**2.3.2.1** Where a dock is fitted with cranes in accordance with the requirements specified in *Part VII – Lifting Appliances of the Rules for Classification and Construction of Floating Docks*, the mark of limited period of class validity (if any) or the main symbol of class is followed by mark: **UD**.

**2.3.2.2** Mark of lifting appliances fitted is assigned at the Owner's request.

## **2.4 Amendments to Marks in the Symbol of Class**

PRS may delete or amend a respective mark in the symbol of class in case the conditions for the assignment of such a mark have been changed or exceeded.

## **2.5 Additional Descriptive Information**

**2.5.1** To characterise the dock design features, permanent limitations on service (e.g. dock lifting capacity) or other special properties considered by PRS as significant for the assigned class, additional information may be included in the *Certificate of Class* and in the *Register*.

## **2.6 Scope of Classification**

**2.6.1** Within the classification services, PRS performs survey of the construction and modification of docks as well as docks in service which consists in the performance of periodical surveys as specified in 3.2.1.

**2.6.2** Classification survey of docks covers:

- .1 hull construction, i.e. the pontoons and walls, as well as stability and freeboard calculations;
- .2 hull construction, i.e. the pontoons and walls, as well as stability and freeboard calculations
- .3 machinery, piping, boilers, pressure vessels;
- .4 electrical equipment;
- .5 fire-extinguishing and fire-detection systems as well as dock installations intended to supply extinguishing media to the fire-extinguishing systems of the docked ship;
- .6 dock anchoring equipment;
- .7 cranes and other lifting appliances, such as winches, lifts, hoists, movable ramps and auxiliary davits (technical requirements for such equipment are specified in *Part VI – Lifting Appliances of the Rules for Statutory Survey of Sea-going Ships*).

**2.6.3** Materials, machinery, and equipment covered by the *Rules* and intended for the construction, modification and repair of docks such as:

- materials intended for the dock hull,
- sea gate valves and fittings,
- main ballast water pumps and rest-water pumps,
- I.C. engines and electric motors, generating sets, wiring, switchboards,
- gas arrangements for fire protection,
- fire pumps,
- boilers,
- cranes (for additional mark in the symbol of class in accordance with 2.3.2)

are subject to PRS survey at the manufacturers' premises to obtain respective PRS approval certificates.

### 3 CLASSIFICATION SURVEYS OF DOCKS IN SERVICE

#### 3.1 General

3.1.1 Docks in service are subject to surveys for the assessment of their technical condition of:

- .1 hull, i.e. the pontoon and wings,
- .2 machinery,
- .3 electrical installations,
- .4 steam boilers and their fittings,
- .5 pressure vessels,
- .6 piping,
- .7 fire extinction, detection and protection systems as well as dock installations intended to supply extinguishing media to the fire-extinguishing systems of the docked ship,
- .8 stability and freeboard,
- .9 cranes (for additional mark in the symbol of class in accordance with 2.3.2),
- .10 installations and connections for the shore-based power supply.

Thickness measurements for hull structural elements are performed in the scope determined by PRS surveyor subject to the hull technical condition.

3.1.2 If the *Certificate of Class* has expired, PRS may – at an acceptance of a dock for classification – extend the scope of survey required in 3.2.1.2.

3.1.3 The Owner shall properly prepare the hull, machinery, electrical equipment as well as installations for each survey. If, during the survey, entering a confined space is necessary, then the requirements contained in *Publication No. 28/I – Requirements for Safe Entry to Confined Spaces* shall be fulfilled.

#### 3.2 Scope of Surveys

##### 3.2.1 General

All docks classed with PRS are subject to the following periodical surveys:

- annual survey,
- class renewal surveys.

3.2.1.1 Annual survey aims to check that the hull and its equipment, machinery and dock installations are kept in good order.

Annual survey is performed within 3 months, before and after each anniversary of the class assignment or class renewal.

The annual survey covers:

- activities specified in 3.2.3.2, 3.2.3.3, 3.2.3.5, 3.2.3.7, 3.2.5.1, 3.2.6.1, 3.2.8.1 ÷ 3.2.8.5, 3.2.10.3, 3.2.11.3, 3.2.12.7 ÷ 3.2.12.13, 3.2.14.1 in the full scope;
- activities specified in 3.2.4.3 – only for the outer ballast tanks in the dock wings;
- operation tests specified in 3.2.9.1, 3.2.9.2, 3.2.10.1, 3.2.10.2, 3.2.11.2, 3.2.12.1, 3.2.12.5, 3.2.12.6.

3.2.1.2 Class renewal survey aims to check that the hull and its equipment, machinery and dock installations fulfil the requirements of the *Rules* and the dock is fit for its intended service under the conditions specified in the *Certificate of Class* for the subsequent class validity period subject to the proper dock operation and maintenance.

Class renewal survey covers all the activities specified in 3.2.2 ÷ 3.2.15.

##### 3.2.2 Bottom Survey of Hull

3.2.2.1 After 10 years have lapsed from the completion of dock construction, survey of the outer bottom below the light waterline shall be performed by PRS divers.

Dry dock survey of the outer bottom shall be performed of the part of the dock in question shall be performed for the first time not later than after 15 years have lapsed.



Subsequent surveys of the outer bottom below the light waterline shall be performed by PRS divers and in dry dock alternately.

The intervals may be reduced for docks assigned an additional mark of limited class validity in the main symbol of class.

Dry dock surveys of the outer bottom below the light waterline may be waived subject to PRS consent in each particular case. In that case, surveys of the outer bottom below the light waterline shall be performed by PRS divers at intervals not exceeding 2.5 years  $\pm$  6 months.

In order to ease the divers' job, it is recommended that during the dock construction or at the first dry dock survey permanent marks with frame numbers be made in way of the surveyed dock waterline and at the level around 2 m above its waterline to facilitate the divers' sense of direction.

**3.2.2.2** The survey shall be so performed by divers as to provide reliable information on the survey scope as if it had been performed in dry dock. The method of such a survey performance by divers is in each particular case subject to PRS agreement in sufficient advance.

Visual examination of the outer bottom below the light waterline by a diver shall be supplemented by the inspection of the outer shell of dock in way of the lowest waterline. This inspection shall be performed when the dock has emerged maximally.

**3.2.2.3** In justified cases, PRS may allow divers engaged by the Owner to perform the inspection on the following conditions:

- the divers are approved by PRS,
- the inspection is witnessed by PRS surveyor,
- final assessment of the technical condition of underwater part of hull is made by PRS surveyor.

**3.2.3** Scope of survey of the external surfaces of dock hull:

- .1 pontoon plating with special attention paid to the strake under the keel block foundations,
- .2 dock wing plating,
- .3 upper deck and safety deck plating,
- .4 manholes for the access to the tanks in pontoon deck and in wing decks as well as companionway trunks,
- .5 coamings and companionways,
- .6 superstructure of dock control room,
- .7 air pipe openings,
- .8 fenders.

**3.2.4** Scope of survey of the internal surfaces of dock hull:

- .1 pontoon plating,
- .2 wing plating,
- .3 ballast and fuel tanks,
- .4 bulkheads,
- .5 partition walls,
- .6 internal members,
- .7 vent pipes,
- .8 checking the tightness of the safety deck and wing plating by the test of dock immersion to the upper deck freeboard level.

**3.2.5** Scope of survey of the platforms at dock ends:

- .1 plating,
- .2 lower members,
- .3 fenders.

**3.2.6** Scope of survey of the bridges connecting wings:

- .1 plating,
- .2 swing bridge hinges,
- .3 limiters,
- .4 swing bridge locks.

**3.2.7** Scope of survey in the fully emerged condition (ashore or in another dock):

- .1 plating and structural members (from both outside and inside) whose survey without drydocking is impossible;
- .2 bottom and side fittings (tightness, fixing and hydraulic tests).

**3.2.8** Scope of survey of hull fittings:

- .1 means of dock deflection monitoring – visual examination;
- .2 anchoring arrangements – visual examination;
- .3 mooring arrangements – visual examination, operation tests;
- .4 arrangement for measuring the quantity of water in ballast tanks – operation tests;
- .5 external stairs and barriers – visual examination;
- .6 crane tracks – visual examination.

**3.2.9** Scope of survey of pumps and their prime movers:

- .1 such pumps as main ballast pumps, rest-water pumps, bilge water pumps, cooling water pumps, general purpose pumps, oil fuel transfer pumps, lubrication oil pumps;
- .2 such pumps as fire pumps, boiler feedwater pumps and boiler circulation pumps – visual examination, operation test to be performed in accordance with *Part I – Classification Regulations* of the *Rules for Classification and Construction of Sea-going Ships*.

**3.2.10** Scope of survey of auxiliary machinery:

- .1 I.C. engines – internal examination of the essential components of these engines in dismantled condition and operation tests. PRS may waive the engine examination in dismantled condition or reduce the scope of such an examination if appropriate tests indicate its good technical condition;
- .2 heat exchangers – visual examination and hydraulic tests;
- .3 compressors, steam boilers, pressure vessels – visual examination, hydraulic tests and operation tests to be performed in accordance with *Part I – Classification Regulations* of the *Rules for Classification and Construction of Sea-going Ships*.

**3.2.11** Scope of survey of piping inclusive of its fittings:

- .1 such systems as ballast system, rest-water system, bilge system, cooling water system, lubrication oil system – visual examination and operation test; PRS surveyor may require hydraulic test to be performed;
- .2 such systems as fire systems, compressed air systems, feedwater systems as well as boiler blow-off and skimming system – visual examination, hydraulic tests and operation tests to be performed in accordance with *Part I – Classification Regulations* of the *Rules for Classification and Construction of Sea-going Ships*;
- .3 remote control of ballast water valves – operation test;
- .4 fuel oil independent tanks and lubrication oil independent tanks – visual examination and operation test; PRS surveyor may require hydraulic test to be performed.

**3.2.12** Scope of survey of electrical installations and equipment:

- .1 Dock's sources of electrical power:
  - generating sets (electrical part) and batteries for emergency – visual examination, measurements and operation test.
- .2 Oil-filled main transformers:
  - visual examination of the vat and drip oil tray, with special attention paid to any oil leak, the condition of insulators, bus-bars, bus connectors and cables, service and protective grounding as well as informative notices on transformer chambers and the condition of mechanical ventilation arrangements;
  - transformer oil condition measurements for compliance with the standard in force or the transformer manufacturer's specifications, current and voltage measurements of the transformer's primary and secondary sides for running at no-load and at load;
  - operation test of: lock of the switch with disconnecter, overcurrent release setting, cooling equipment.

### **.3 Dry-type main transformers:**

– visual examination.

- .4** Distributing devices: high voltage switchboards, main switchboards, control panels, auxiliary switchboards – visual examination, insulation resistance measurement (except auxiliary switchboards) and operation tests with special attention paid to:
  - condition of explanation notices, switchgear, alarm and measurement instrumentation, cables and links, protective earthing of transformers and other equipment;
  - operation of switches and the lock between the disconnectors and circuit breakers, locks between the transformer primary and secondary sides, operation of the entire device in respect of its function.
- .5** Network, high voltage cables, low voltage cables, additional cable sheathing, cable penetrations through bulkheads and decks, flooded cables – with special attention paid to the condition of coatings where mechanical damage is likely to occur.

The inspection of flooded cables shall be performed when the dock is submerged; in locations where cables are connected special attention shall be paid to whether or not water leaks from under mantles as a result of water pressure exerted when the dock is submerged.
- .5** Electric drive of capstans, gate valves, pumps, compressors – visual examination, measurements and operation tests.
- .6** Regular lighting of spaces and places important in respect of the safe dock service, as well as emergency and warning lighting – visual examination and operation test.
- .7** Safety locks and safety buttons – operation test; arrangements powered both electrically and manually – checking the locks preventing from starting electrical drive while manual operation is on, and vice versa.
- .8** Emergency lighting battery rooms – visual examination.
- .9** Fire and alarm systems – operation test performed in accordance with *Part I – Classification Regulations of the Rules for Classification and Construction of Sea-going Ships*.
- .10** Inboard telephone communication – operation test.
- .11** Protective earthings – visual examination.
- .12** Lightning protection – visual examination,
- .13** Installation for the shore-based power supply considering the technical condition of connectors and fixing of cables connecting the box with shore.

#### **3.2.13 Survey of Dock under Continuous Survey**

Continuous survey may take place for dock with a class renewable in a five-year cycle. Subject to PRS consent in each particular case, continuous survey may take place for other dock according to a survey cycle set individually.

**3.2.13.1** Admission of a dock for continuous survey may take place at any periodical survey.

**3.2.13.2** Continuous survey of the floating dock hull covers internal examination and tightness test for the pontoons, ballast tanks and other hull tanks. Continuous survey of the machinery covers the surveys of its components in accordance with the requirements specified in *Part I – Classification Regulations of the Rules for Classification and Construction of Sea-going Ships*.

**3.2.13.3** During each five-year cycle of surveys, all elements shall be subjected to visual examination and tests (if required) at regular intervals as far as practicable with their even distribution over specific annual periods. It is recommended that these visual examinations and tests be performed at an annual survey.

Setting the survey schedule for docks under the continuous survey is left to the Owner's discretion. It is recommended that in the period from the dock class renewal, not more than 40% of the components under the continuous survey be subjected to the second annual survey, not more than 60% of the components under the continuous survey be subjected to the third annual survey, and not more than 80% of the components under the continuous survey be subjected to the fourth annual survey.

The schedules set shall be complied with. The interval between subsequent surveys of specific components shall not exceed 5 years. In justified cases (e.g. in accordance with the manufacturer's manual), however, PRS may set a different survey schedule.

**3.2.14** During the survey the following dock submergence tests shall be performed:

- .1 The test of dock submergence change by at least 0.2 m with the return to the initial submergence.
- .2 The test of dock submergence to the dock upper deck freeboard.

**3.2.15** Periodical surveys of lifting appliances:

- .1 Lifting appliances shall be subjected to survey at least once in 5 years to a five-year survey and annual surveys to be performed between the five-year surveys at intervals not exceeding one year.
- .2 The survey at 5-year intervals consists in detailed visual examination of the appliance supplemented, as needed, by measurements and appropriate tests. The equipment shall be subjected to the survey at 5-year intervals in the dismantled condition. The pieces of machinery and parts of a lifting appliance are not required to be dismantled if there are no doubts about their reliability and no signs of their excessive wear.
- .3 Annual survey consists in the external check of a piece of equipment. Such components of a piece of equipment as pulleys and all parts whose operation has been found defective or whose excessive wear is likely shall be dismantled for the annual survey.
- .4 Load tests of the lifting appliance shall be performed in accordance with the requirements specified in *Part VI – Lifting Appliances* of the *Rules for Statutory Survey of Sea-going Ships* at each periodical survey.
- .5 During crane surveys performed at 5-year intervals, the track substructure shall be checked for compliance with *Part VII – Lifting Appliances* of the *Rules*.
- .6 All periodical surveys shall be performed by PRS surveyor and confirmed by his entry in the *Lifting Appliance Book*.

## **4 TECHNICAL DOCUMENTATION OF DOCK**

### **4.1 Basic Survey Documentation of Dock under Construction**

#### **4.1.1 General**

Before the commencement of the dock construction, the documentation specified in paragraphs from 4.1.2 to 4.1.7 shall be submitted to PRS Head Office for consideration and approval in the applicable scope taking account of the size and type of dock.

**4.1.2** General documentation (for reference):

- .1 dock technical description including the intended service locality and expected symbol of class;
- .2 general arrangement plan showing the layout of spaces ballast tanks and their vent pipes, cofferdams, pump rooms;
- .3 list of the equipment and materials including their basic specifications, manufacturers and approvals possessed;
- .4 Docking Manual *Part II – Hull and Hull Equipment*, chapter 11 of the *Rules*).

**4.1.3** Hull construction documentation:

- .1 longitudinal and transverse strength analysis in the most unfavourable load condition (for atypical loads); for reference;
- .2 midship section with the arrangement and scantlings of transverse members;
- .3 section with the arrangement and scantlings of longitudinal members;
- .4 shell expansion for the bottom, dock wing side walls and decks;
- .5 transverse and longitudinal watertight bulkheads;
- .6 construction of wings, upper deck and safety deck;
- .7 construction of bottom pontoons;
- .8 construction of swing bridges at wing ends;
- .9 openings in the dock hull and deckhouses and their means of closing;
- .10 seatings of engines, boilers and generating sets;
- .11 supports of cranes and their tracks;
- .12 dock hull deflection (strain) gauges, their arrangements and locations of reading taking points;
- .13 dock anchoring arrangements and mooring equipment;

- .14 the dock load condition and the description of a route, time of the year and expected towing time, if the dock is intended to be towed after its construction through an open sailing region.
- 4.1.4 Documentation concerning the dock stability and freeboard:
- .1 calculations of light dock centre of gravity (for reference);
  - .2 calculations and diagrams of hydrostatic curves: displacement, position of the centre of buoyancy, metacentre position and the metacentric radius of dock (for reference);
  - .3 calculations of variation in the position of dock's centre of gravity and its metacentric height during dock flooding and ship lifting phases (for reference);
  - .4 data on dock stability including: dock particulars, diagram of metacentric height and the position of dock's centre of gravity during dock flooding and ship lifting phases, calculations resulting from the criteria specified in paragraphs 1.1.2 and 1.1.3 in *Part III – Stability and Freeboard* of the *Rules*;
  - .5 calculations and drawings related to the determination of maximum draught and freeboard.
- 4.1.5 Documentation of fire protection arrangements:
- .1 plan of structural fire protection indicating: general arrangement of the dock, means of escape and arrangement of fire divisions showing penetrations of piping, cable, ventilation duct, etc. as well as the list of materials intended for insulation and furnishing of all spaces on dock including the information on their fire integrity;
  - .2 basic diagrams of fire-extinguishing installations including the data for calculations;
  - .3 diagrams of fire alarm systems.
- 4.1.6 Documentation of machinery:
- .1 the set of machinery specifications (for reference);
  - .2 boiler positioning plan (if installed);
  - .3 diagrams together with the data for calculations of the following lines: bilge, ballast, sounding, vent, drain, discharge, hydraulic oil scuppers, compressed air, sea-water cooling and exhaust gas as well as ventilation in accommodation spaces, service spaces, machinery spaces and battery rooms;
  - .4 diagram of steam system including shore-based steam supply pipes.
- 4.1.7 Documentation of electric installations:
- .1 diagram of the dock connection to the shore-based power supply;
  - .2 essential diagram of electrical installation including the specification of the circuits' data, protective measures applied and cross-sectional areas of cables;
  - .3 switchboard diagrams;
  - .4 energy balance for the main sources of power supply and transformers applied;
  - .5 list of short-circuit power levels for specific switchboard buses and at their supply (for reference);
  - .6 analysis of protective measures' selectivity (for reference);
  - .7 main switchgear selection (for reference);
  - .8 diagrams of internal communications and signalling;
  - .9 drawings showing the method and location of the fixing of batteries.
- 4.1.8 Documentation of cranes:
- .1 technical description;
  - .2 assembly drawing of crane including the specification of its machinery and protective arrangements;
  - .3 drawing of rigging;
  - .4 drawing of the crane seating on dock, drawing of the hull reinforcement in way of the crane position and drawing of the crane fixing in the idle condition;
  - .5 calculations of forces acting on the crane components, strength calculations of the crane seating and its stability calculations;
  - .6 drawing of steel structures including their strength and stability calculations;
  - .7 in cranes with the slewing circle assembly, the drawing of the section of crane fixing to its seating including the specifications of the slewing ring bearing and bearing screws; calculations providing

the bearing design loads; calculations of the screw joint giving the screw stress caused by external load and their fatigue life;

- .8 technical documentation of machinery and the drives of the pieces of machinery covering:
  - .8.1 assembly drawings including cross-sections;
  - .8.2 drawings of carrying shafts, gear wheels, rope drums, brakes and clutches;
  - .8.3 diagrams of installations;
  - .8.4 drawings of seating frames and the associated regions of hull including welding particulars;
  - .8.5 strength calculations of essential load-bearing parts or their results (for reference);
  - .8.6 technical or explanatory description giving the essential particulars (for reference);
  - .8.7 test programme for prototype and extreme pieces of machinery;
- .9 technical documentation of electrical equipment covering:
  - .9.1 operating description and main characteristics (for reference);
  - .9.2 list of such components as machinery, apparatus, instrumentation and materials;
  - .9.3 design assembly drawings;
  - .9.4 electric drive diagram indicating its essential components;
  - .9.5 test programme;
- .10 crane test programme.

#### **4.2 Basic Survey Documentation of Dock under Modification**

**4.2.1** Prior to the dock modification, the documentation of those portions of hull, machinery and dock equipment intended to be modified shall be submitted to PRS Head Office for consideration and approval.

**4.2.2** Where new machinery or equipment subject to the requirements of the *Rules* which are substantially different from the existing machinery or equipment are intended to be installed on the dock in service, supplementary documentation of the installations associated with such equipment or machinery in the scope as required for a dock under construction shall be submitted to PRS Head Office for consideration and approval (see sub-chapter 4.1).

#### **4.3 Workshop Documentation of Dock under Construction**

**4.3.1** After the basic survey documentation mentioned in sub-chapter 4.1 has been approved, the workshop documentation, as appropriate for the technological principles accepted for the specified conditions, shall be submitted to the relevant PRS Branch Office or Survey Station.

**4.3.2** In each case, at least the following documents shall be submitted:

- .1 arrangement plan of draught marks;
- .2 drawings of penetrations of piping, ventilation ducts, etc. through structural members;
- .3 arrangement plan of openings in the wing plating and pontoon plating including their dimensions, location, means of closure and compensating reinforcements (discharge pipes, sea valves, scupper, sea chest openings);
- .4 arrangement plan of openings in the pontoon decks and safety dock including their dimensions, coaming heights plan and compensating reinforcements;
- .5 welding charts and the plans of the examination of dock hull welds;
- .6 programme of dock hull tightness tests;
- .7 programme of dock tests covering dock submersion tests and determining the height of dock air cushions, piping, fire protection arrangements, boilers, machinery and electrical installations;
- .8 drawings of cable passages, bulkhead penetrations, deck penetrations, and particulars of cable fixing method;
- .9 regular lighting and emergency lighting plans;
- .10 power distribution system plan;
- .11 arrangement and views of switchboards and transducer rooms;
- .12 position and arrangement of the shore connection.

**List of amendments effective on the 1 February 2017**

<i>Item</i>	<i>Title/Subject</i>	<i>Source</i>
<a href="#">1.2</a>	Definition of “floating dock”	Survey experience
<a href="#">2.1.4</a>	Class assignment/renewal	
<a href="#">2.1.9</a>	<i>Class withdrawal</i>	
<a href="#">2.3.2.1</a>	<i>Cranes</i>	<i>PRS UUP</i>
<a href="#">2.6.2.6</a>	Scope of classification/other lifting appliances	
<a href="#">2.6.3</a>	Scope of survey at the manufacturers’ premises	
<a href="#">3.1.3</a>	Survey preparation	Survey experience
<a href="#">3.2</a>	Scope of survey	
<a href="#">4.1</a>	Survey documentation of dock under construction	