

# EUROPASS SUPPLEMENT TO THE DIPLOMA

## TITLE OF THE CERTIFICATE (original language: ES)

*Técnico en mantenimiento de embarcaciones de recreo*

## TRANSLATED TITLE OF THE CERTIFICATE (English)

*Diploma of Education in the Maintenance of Pleasure Boats*

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### PROFILE OF SKILLS AND COMPETENCES

The holder has acquired general skills relating to maintaining in good condition, use and operation the hull, structures, components and systems that make up pleasure boats, using established procedures, complying with the required safety, occupational risk prevention and environmental specifications.

Within this framework, each PROFESSIONAL MODULE includes the following LEARNING RESULTS that the holder acquires.

#### “Preparación de embarcaciones de recreo para trabajos de mantenimiento” (Preparation of Pleasure Boats for Maintenance Work).

The title holder:

- Characterises the different areas that exist in marinas, specifying the functions assigned to them.
- Relates the construction elements of pleasure boats to their construction characteristics and to their function on the boat.
- Prepares pleasure boats in a port and in a dry dock for their maintenance, carrying out the necessary manoeuvres, relating the phases, the means to be used, and the precautions to be taken.
- Prepares the work area associated with the leisure boat in "dry dock" and at the port mooring, to carry out maintenance activities safely.
- Identifies possible occupational and environmental risks involved in operations to prepare, moor and secure pleasure boats, relating them to the maintenance activities involved, the measures to be adopted, and how to prevent them.

#### “Mecanizado básico” (Basic Machining).

The title holder:

- Draws sketches of parts, interpreting the specific symbolism and applying the corresponding conventions of representation.
- Traces parts for subsequent machining, relating the specifications of sketches and plans to the accuracy of the measuring equipment.
- Machines parts manually, relating the measurement techniques to the tolerance margins of measurements provided in sketches and drawings.
- Threads external and internal parts, carrying out the necessary calculations and operations.
- Makes connections between metal components by means of soft soldering, describing the techniques used in each case.

#### “Mantenimiento del sistema de propulsión y equipos auxiliares de las embarcaciones de recreo” (Maintenance of the Propulsion System and Auxiliary Equipment of Pleasure Boats).

The title holder:

- Prepares the start-up of the propulsion system and auxiliary equipment of boats, relating the function of their components and auxiliary circuits to the operation of the assembly.
- Carries out the start-up and shut-down operations and the control of thermal engines and their auxiliary systems on boats, relating the sequences and justifying the ranges and parameters required to each phase of the process.
- Performs preventive, predictive and corrective maintenance operations on the auxiliary equipment and auxiliary machinery of boats, relating these to the established procedure and applicable maintenance plan.
- Performs preventive and corrective maintenance operations on diesel and petrol internal combustion engines, relating the activity performed and the use of tools and equipment to the established procedures.
- Performs maintenance operations on outboard, inboard and water jet propulsion systems of boats, relating the activities performed to the procedures established in the technical documentation and to the use of required tools and equipment.
- Applies anti-corrosion protection to boats, relating the protection used to the desired effects and results.
- Joins different metallic materials commonly used on boats, using manual oxyacetylene and electric welding equipment, in horizontal and vertical positions, relating the characteristics of the joint obtained to the technique used, the characteristics of the materials and the requirements of the joint.
- Applies the specifications for the prevention of occupational and environmental risks in the maintenance work of propulsion and auxiliary systems, relating the risks of the activity to the precautions that should be taken.

### **“Mantenimiento de las instalaciones y máquinas eléctricas en buques y embarcaciones” (Maintenance of Electrical Installations and Machinery on Ships and Boats).**

The title holder:

- Determines operating parameters of direct current, alternating current and three-phase alternating current electric circuits based on technical specifications, carrying out readings with measuring equipment and calculating electric magnitudes.
- Couples and distributes loads in accordance with power and lighting demands, controlling the operating parameters of the electrical generators in the power distribution panel.
- Performs maintenance operations on electrical machinery, identifying breakdowns and malfunctions, applying techniques to achieve optimum performance and analysing technical documentation.
- Performs preventive and corrective maintenance operations on the main distribution board, carrying out measurements and interventions in accordance with technical documentation.
- Assembles low-voltage electrical installations (lighting circuits and motor start-up circuits), drafting diagrams and applying the required techniques in accordance with low-voltage regulations.
- Maintains and installs services and direct current circuits, interpreting diagrams and carrying out programmed or required operations to maintain their operability.
- Locates and repairs breakdowns in generator and battery charge controllers by replacing them, applying the established intervention protocols and analysing the operating parameters.
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### **“Mantenimiento de sistemas de refrigeración y de climatización en embarcaciones de recreo” (Maintenance of Cooling and Air Conditioning Systems in Pleasure Boats).**

The title holder:

- Assembles cooling and air-conditioning systems used on boats, selecting the necessary means and associating the elements to their function in the system.
- Starts up, controls the operation and shut-down of cooling and air-conditioning systems used on pleasure boats, identifying the operating variables and evaluating their influence on the performance of the installation.
- Locates and repairs faults and breakdowns in the equipment and components that make up a cooling and air conditioning system used on boats, assessing operating parameters and their influence on its operation, applying procedures in accordance with technical specifications.
- Performs preventive maintenance of cooling and air conditioning systems used in pleasure boats, assessing the safety and environmental regulations and following the established protocols.
- Applies the specifications for the prevention of occupational and environmental risks in the maintenance work of the components and equipment of cooling and air conditioning installations, relating the activity to the precautions that should be taken.
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### **“Mantenimiento de superficies y elementos de materiales compuestos de embarcaciones de recreo” (Maintenance of Surfaces and Composite Material Components of Pleasure Boats).**

The title holder:

- Characterises, with the help of associated technical documentation, the raw materials involved in the manufacture of composite material components.
- Prepares tools required for the application of working techniques in composite materials on boats, using associated technical documentation.
- Applies specific techniques to produce laminated structures in composite materials, to obtain preforms in boat components.
- Prepare the areas of the boat with minor defects, cleaning up uneven or damaged areas.

### **“Tratamientos superficiales y pintado de embarcaciones de recreo” (Surface Treatment and Painting of Pleasure Boats).**

The title holder:

- Prepares the surfaces of boats and their components for subsequent treatment or painting, relating the activity to the desired result.
- Levels off the dimensions and maintains the shape of boat surfaces, justifying the equipment or tools used.
- Applies rigging to boat surfaces, taking into account their characteristics, type of rigging applied and purpose.
- Paints surfaces of boat components applying the techniques specified by the paint and boat manufacturer, relating the activities to the characteristics of the obtained paint.
- Corrects small defects in surface painting, relating the factors that cause them and how to solve them.

### **“Mantenimiento de instalaciones de equipos electrónicos e informáticos de embarcaciones de recreo” (Maintenance of Electronic and IT Equipment Installations on Recreational Boats).**

The title holder:

- Identifies the components of the installation and describes assembly/disassembly characteristics and the operation of electronic equipment for Communication, Navigation, Distress and Maritime Safety systems, among others, on pleasure boats, using technical documentation and the required measurement and control instruments.

- Identifies typical breakdowns in the installations of electronic systems for Communication, Navigation, Distress and Maritime Safety, among others, on pleasure boats, and replaces the equipment if necessary, checking its operation with the help of the required technical documentation and measurement equipment.
- Assembles and disassembles the electronic equipment of Communication, Navigation, Distress and Maritime Safety systems on pleasure boats, complying with the specified safety requirements.
- Assembles and replaces, if necessary, equipment and other auxiliary components of the "entertainment" (video, television, sound equipment, amplifiers, among others) and internal communication equipment on boats.
- Assembles and maintains the operation of IT equipment and associated peripherals and the Internet, reinstalling the operating system and specific programs if necessary.

#### **“Mantenimiento de aparejos de embarcaciones de recreo” (Maintenance of Pleasure Boat Rigging).**

The title holder:

- Dismantles/assembles the mast and standing rigging of "typical" pleasure boats in compliance with safety and occupational risk prevention specifications, describing the phases and precautions that should be taken.
- Repairs the masting of recreational boats, relating the possible causes of the damage to the maintenance to be carried out.
- Repairs components of the standing and running rigging of pleasure boats, relating the possible causes of the damage to the maintenance to be carried out.
- Maintains the control systems and auxiliary components of the rigging on pleasure boats, relating any possible breakdowns to the maintenance required, and using the necessary equipment and means.
- Obtains and joins cloths of different materials, shapes and sizes, applying the required techniques and using the products that make it possible to shape sails.
- Assembles and installs accessories for sails in accordance with the finishes established in the design and the given requirements.
- Makes and repairs sails, covers, awnings and other textile components used on boats, complying with the given requirements and using the required means and materials.

#### **“Mantenimiento de cubiertas de madera y adaptación/repelación de mobiliario en embarcaciones de recreo” (Maintenance of Wooden Decks and Adaptation/Repair of Furniture on Pleasure Boats).**

The title holder:

- Identifies the main types of wood and products used in the manufacture of furniture for pleasure boats, describing their characteristics and applications.
- Installs and/or adapts furniture on boats justifying the size, shape and technical characteristics involved.
- Prepares templates for adapting furniture, applying marking, cutting and finishing techniques.
- Selects materials for the repair/adaptation of furniture on boats, justifying his or her choice according to the characteristics of the product and the desired finish.
- Machines furniture parts into shape, using portable machines, relating their use to the desired result.
- Adapts parts and assembles elements of furniture, locating and securing their component parts in accordance with the technical documentation, relating the option used to the objective.
- Repairs components of the wooden decks of pleasure boats, guaranteeing their solidity and relating the procedure used to the required finish.
- Seals wooden boat decks to guarantee their watertightness, justifying the procedure used to the required finish.
- Maintains portable and conventional machines in working order, applying the maintenance operations required by the manufacturer and the established procedures.

#### **“Inglés” (English).**

The title holder:

- Recognises professional and day-to-day information contained in oral statements made in standard language, analysing the global content of the message and relating it to the corresponding linguistic resources.
- Interprets professional information contained in written texts, analysing its content in a comprehensive way.
- Delivers clear and well-structured oral messages, participating as an active agent in professional conversations.
- Prepares simple texts, relating grammatical rules to the purpose of the text.
- Applies professional attitudes and behaviour to communication situations, describing the typical relationships characteristic of the country of the foreign language.

### **“Formación y orientación laboral” (Training and Career Guidance).**

The title holder:

- Selects employment opportunities, identifying the different possibilities of insertion and lifelong learning alternatives.
- Applies teamwork strategies, assessing their effectiveness and efficiency for the achievement of the organisation's objectives.
- Exercises the rights and complies with the obligations derived from labour relations, recognising them in the different employment contracts.
- Determines the protective action of the Social Security system in the face of the different contingencies covered, identifying the different types of benefits.
- Assesses the risks derived from his or her activity, analysing the working conditions and the risk factors that exist in their working environment.
- Participates in the preparation of a risk prevention plan in a small company, identifying the responsibilities of all the agents involved.
- Applies prevention and protection measures, analysing risk situations in the work environment of the holder of a Diploma of Education in the Maintenance of Pleasure Boats.

### **“Empresa e iniciativa emprendedora” (Company and Entrepreneurial Initiative).**

The title holder:

- Recognises skills associated with entrepreneurship, analysing requirements derived from jobs and business activities.
- Defines the opportunity to create a small company, assessing its impact on the environment and incorporating ethical values.
- Carries out activities for the incorporation and start-up of a company, selecting the legal form and identifying the associated legal obligations.
- Carries out basic administrative and financial management activities for an SME, identifying the main accounting and tax obligations and filling in documentation.

### **“Formación en centros de trabajo” (Workplace Training).**

The title holder:

- Identifies the structure and organisation of the company, relating them to the type of service it provides.
- Applies ethical and labour habits in the development of his or her professional activity, in accordance with the characteristics of the job and the procedures established in the company.
- Carries out maintenance activities on the rigging, structures and hull of boats, assessing the installations and equipment, planning the work to be done and complying with the required safety measures.
- Carries out maintenance activities on the electrical and electronic systems of pleasure boats, assessing the installations and equipment, planning the work to be done and complying with the required safety measures.
- Carries out maintenance activities on the propulsion plant and auxiliary systems of pleasure boats, assessing the installations and equipment, planning the work to be done and complying with the required safety measures.
- Carries out activities for the assembly of the mast and the standing rigging of “typical” pleasure boats with the help of a crane and in compliance with safety and occupational risk prevention specifications.

### **RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE**

The holder of a Diploma of Education in the Maintenance of Pleasure Boats generally works in small companies dedicated to the maintenance of pleasure boats.

The following are the most relevant occupations and jobs:

- General maintainer of pleasure boats.

### **OFFICIAL BASIS OF THE CERTIFICATE**

**Name and status of the body awarding the certificate:** The Ministerio de Educación (the Ministry of Education) or the Autonomous Communities in the area of their own administrative responsibility. The degree has academic and professional effects that are valid throughout the entire State.

**Official duration of the Diploma:** 2,000 hours.

**Level of the certificate (national or international):**

- NATIONAL: Post-compulsory secondary education.
- INTERNATIONAL:
  - Level 3 of the International Standard Classification of Education (ISCED 3).
  - Level ----- of the European Qualifications Framework (EQF-----).

**Entry requirements:** A Graduate Degree in Secondary Education, or a Certificate of having passed the corresponding entrance test.

**Access to the next level of education or training:** Will be able to access Higher Level Training Cycles, subject to passing an entrance test.

**Legal basis.** Rules and regulations on which the Diploma is based:

- Minimum teaching requirements established by the State: Royal Decree 91/2018, of 2 February, which establishes the Diploma of Education in the Maintenance of Pleasure Boats and which lays down the corresponding minimum education requirements.

**Explanatory note:** This document is intended as supplementary information to the Diploma in question, but on its own it does not have any legal validity. It may be accompanied by an Annex I which the corresponding Autonomous Community shall fill in.

**INFORMATION ABOUT THE EDUCATION SYSTEM**

