

EUROPASS CERTIFICATE SUPPLEMENT

TITLE OF THE DIPLOMA (ES)

Técnico en Redes y Estaciones de Tratamientos de Aguas

TRANSLATED TITLE OF THE DIPLOMA (EN)⁽¹⁾

Technician in Water Networks and Waste Water Treatment Plants

(1) This translation has no legal status.

DIPLOMA DESCRIPTION

The holder of this diploma will have acquired the General Competence with regard to:

Carrying out the assembly, operation and maintenance of water networks, as well as operating and maintaining the equipment and facilities of waste water treatment plants, applying the current legislation and the existing protocols for quality, safety and labour risk prevention, ensuring their functionality and respect for the environment.

Within this framework, the PROFESSIONAL MODULES and their respective LEARNING OUTCOMES acquired by the holder are listed below:

“Water network layout”.

The holder:

- Identifies, within the technical documentation related to civil engineering and urban development projects, the associated requirements for the sketches, selecting the information requested for each case.
- Obtains relevant information for the sketching of graphic documentation for projects, managing it both in paper and electronic formats.
- Draws simple plans and sketches of works, defining their corresponding stages and the resources required.
- Materialises simple elements for the drawings, marking points, alignments, the distance, the height and the ground level plan, and interpreting relevant plans and sketches.

“Water treatment plants”.

The holder:

- Interprets the sequence of treatments used in the production of water intended for human consumption that takes place in drinking water treatment plants (in Spanish, ETAP), describing their role and influence on the plant.
- Identifies the different waste water treatment processes in the sewage plants (in Spanish, EDAR), describing the basic facilities used and the normal operation conditions.
- Monitors and verifies the operation of a waste water treatment plant, relating it to the control parameters and variables.
- Comes up with solutions to any problem in the sewage plants (namely, EDAR), recognising the potential factors that may cause them.
- Applies proceedings for the generation of sewage treatment by-products, associating them with operations of treatment, storage, recovery and removal of waste.

“Electrical water network installations”.

The holder:

- Builds switching and power circuits with typical components, interpreting diagrams and verifying their operation.
- Draws electrical switchboard diagrams and installations, applying the regulations and conventions used for representation.
- Builds associated electrical boards and systems, interpreting diagrams and justifying the role of each element of the whole.
- Connects motors with the auxiliary elements of control, protection and speed regulation, interpreting diagrams and verifying their operation.
- Measures and undertakes electrical security tests, acting at equipment and facilities in operation and interpreting the outcomes.
- Locates and repairs any dysfunction of switchboards and electrical installations, determining the underlying causes and relating them to the visible symptoms.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks, measures and equipment to prevent them.

“Machining and joining techniques”.

The holder:

- Applies protection techniques to piping and equipment, identifying the properties of the material used in the facilities.
- Carries out machining operations for the assembly of pipes and equipment, applying suitable proceedings to each case.
- Makes non-welded joints, determining the joint characteristics and applying suitable techniques to each case.
- Welds metal components of facilities, applying suitable welding techniques depending on the characteristics of the elements to be welded.
- Welds plastic pipes and fittings, analysing the properties of the materials to be welded.
- Complies with the rules on labour risk prevention and environmental protection, identifying the associated risks, the actions and equipment to prevent them.

“Water network assembly and commissioning”.

The holder:

- Makes work plans for the assembly of water supply networks, selecting the work procedures from the corresponding project.
- Makes work plans for the assembly of sanitation networks, selecting the work procedures from the corresponding project.
- Carries out assembly operations of the water supply and sanitation networks, interpreting the technical documentation and applying the established work procedures.
- Carries out testing operations prior to the commissioning of water supply and sanitation networks, identifying the procedures specified in the technical documentation.
- Plans the manoeuvres for the commissioning and operations of water supply and sanitation networks on the basis of the pertaining protocols.
- Undertakes the manoeuvres for the commissioning and operations in water supply and sanitation networks on the basis of the pertaining protocols.
- Applies prevention and safety measures related to the commissioning of water supply and sanitation networks, interpreting the security plans of companies in that particular sector.

“Water quality”.

The holder:

- Defines the quality framework for water management, applying its foundations to the context where it develops.
- Takes water samples, defining the characteristics of the process followed.
- Analyses the standards on labour risk prevention, identifying the associated risk in laboratory work.
- Manages the waste generated in the process, interpreting the safety and environmental management regulations.

“Water networks and waste water treatment plant construction”.

The holder:

- Defines the main types of construction works in water networks and wastewater treatment plants, relating the processes for its operation to its characteristics and basic requirements.
- Sets up walls to be covered by brick and concrete structures, interpreting the prescriptions included in the technical documentation.
- Undertakes urban development works for linear pipelines and additional and singular elements, interpreting the technical prescriptions.
- Organises the tasks of the work to be executed, planning activities and allocating human and material resources.
- Manages, at a basic level, the current legislation on labour risk prevention in the construction sector, describing the characteristics of its implementation.

“Equipment and facilities maintenance”.

The holder:

- Uses measurement and control instruments, interpreting the specified parameter values according to the use of the International System.
- Identifies the role of the electromechanical elements of equipment, machinery and facilities, describing their influence.
- Applies basic level maintenance, relating the procedures used to the equipment and facilities involved.
- Applies measures for the upkeep, cleaning and maintenance of facilities and buildings in a wastewater treatment plant, interpreting the cleaning and maintenance programme or plan.
- Complies with the rules of labour risk prevention and environmental protection, identifying the associated risks, the measures and equipment to prevent them.

“Hydraulics and water networks”.

The holder:

- Defines the integral water cycle, describing its characteristics, procedures involved and their specifications.
- Determines the associated effects on water movement through pipelines, applying the governing principles.

- Describes the operation of water supply networks, describing their constituent parts and their specifications and related operations.
- Describes the operation of sanitation networks, describing their constituent parts and their specifications and related operations.
- Defines the main characteristics of the water efficiency management process, interpreting different models of management and usage.

“Water network management”.

The holder:

- Develops the maintenance plans of water distribution and sanitation networks, analysing their overall operation.
- Undertakes preventive maintenance operations of water distribution and sanitation networks, interpreting the established maintenance plan.
- Undertakes corrective maintenance operations of water distribution and sanitation networks, developing the established plan.
- Applies the prevention and safety measures as regards the maintenance of water distribution and sanitation networks, identifying the related regulations in safety plans of companies of that particular sector.

“Assembly and maintenance of water facilities”.

The holder:

- Sets up small water facilities and networks, analysing their characteristics and selecting equipment and components.
- Carries out the assembly of pipelines, fittings and control and regulation elements of circuits, interpreting plans, regulations and technical specifications, and using tools and equipment in good safety conditions.
- Installs water pumping equipment on the basis of plans, diagrams and technical specifications, applying the assembly techniques of mechanical and electrical units.
- Installs terminal equipment of water facilities (hot and cold sanitary water, fire safety networks, among others) from plans and technical specifications, applying assembly procedures and techniques.
- Undertakes preventive maintenance operations in water facilities equipment, following the current legislation and manufacturer’s instructions.
- Diagnoses breakdowns and dysfunctions in water facilities, identifying their origin and applying the most suitable methods and procedures for their repairs.
- Repairs electromechanical equipment in water facilities by replacement, applying corrective maintenance techniques and procedures, restoring the initial operation and safety conditions.
- Complies with the rules of labour risk prevention and environmental protection, identifying the associated risks, the measures and equipment to prevent them.

“Vocational Training and Guidance”.

The holder:

- Selects job opportunities, identifying the different possibilities of labour integration, and the alternatives of lifelong learning.
- Applies teamwork strategies, assessing their effectiveness and efficiency on the achievement of the company’s goals.
- Exercises rights and complies with the duties derived from labour relationships, recognising them in the different job contracts.
- Determines the protective action of the Spanish Health Service in view of the different covered eventualities, identifying the different types of assistance.
- Assesses risks derived from his/her activity, analysing job conditions and risk factors present in his/her labour setting.
- Participates in the development of a risk prevention plan in a small enterprise, identifying the responsibilities of all agents involved.
- Applies protection and prevention measures, analysing risk situations in the labour setting of the Technician in Water Networks and Waste Water Treatment Plants.

“Business and Entrepreneurial Initiative”.

The holder:

- Recognises skills related to entrepreneurial initiative, analysing the requirements derived from job positions and business activities.
- Defines the opportunity of creating a small enterprise, assessing the impact on the performance setting and incorporating ethic values.
- Carries out the activities for the setting-up and implementation of a company, choosing the legal structure and identifying the associated legal obligations.
- Carries out basic administrative and financial management activities of an SME, identifying the main accounting and tax obligations and filling in documentation.

“On the Job training”.

The holder:

- Identifies the company’s structure and organization, relating them to the type of service provided.

- Applies ethical and work habits in the development of his/her professional activity, according to the characteristics of the job and the procedures established by the enterprise.
- Carries out the assembly of water networks, following the quality assurance processes established in the company and the related safety protocols.
- Undertakes operations associated with water network, following the quality assurance processes established in the company and the related safety protocols.
- Undertakes operations associated with water network maintenance, applying the corresponding maintenance plans.
- Carries out operations associated with wastewater treatment plants, following the quality assurance processes established in the company and the related safety protocols.
- Carries out equipment and facilities maintenance operations in wastewater treatment plants, applying the pertaining maintenance plans.

RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE DIPLOMA

The Technician in Water Networks and Waste Water Treatment Plants works in the Administration and companies dedicated to carry out the assembly, operations and maintenance of water supply, sanitation and building networks, as well as in companies within the industry of drinking water treatment and wastewater treatment.

The most relevant occupations or jobs are the following:

- Water Supply and Distribution Network Technician.
- Sanitation Network and Facilities Technician.
- Water Network Technician.
- Sanitation Network Technician.
- Water Supply Treatment Plant Operator.
- Wastewater Treatment Plant Operator.
- Wastewater Treatment Plant Technician.
- Incineration Plant, Water Treatment Operator and other plant operations.
- Building Water Facilities Technician.

AWARD, ACCREDITATION AND LEVEL OF THE DIPLOMA

Name of the body awarding the diploma on behalf of the King of Spain: Spanish Ministry of Education or the different Autonomous Communities according to their areas of competence. The title has academic and professional validity throughout Spain.

Official duration of the education/ training leading to the diploma: 2000 hours.

Level of the diploma (national or international)

- NATIONAL: Post-Compulsory Secondary Education
- INTERNATIONAL:
 - Level 3 of the International Standard Classification of Education (ISCED3).
 - Level _____ of the European Qualifications Framework (EQF__).

Entry requirements: Holding the Certificate in Compulsory Secondary Education or holding the corresponding access test.

Access to next level of education/training: This diploma may provide access to Higher Technical Cycles provided that an entrance exam is passed.

Legal basis. Basic regulation according to which the diploma is established:

- Minimum teaching requirements established by the State: Royal Decree 114/2017, according to which the diploma of Technician in Water Networks and Waste Water Treatment Plants and its corresponding minimum teaching requirements are established.

Explanatory note: This document is designed to provide additional information about the specified diploma and does not have any legal status in itself. An Annex I may be added and will be filled in by the corresponding Autonomous Community

INFORMATION ON THE EDUCATION SYSTEM

