

# EUROPASS CERTIFICATE SUPPLEMENT

## TITLE OF THE DIPLOMA (ES)

*Técnico en Fabricación de Productos Cerámicos*

## TRANSLATED TITLE OF THE DIPLOMA (EN)<sup>(1)</sup>

*Technician in Manufacture of Ceramic Products*

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(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 and coordinating the preparation, maintenance and handling of machinery, equipment and facilities for the manufacture of shaped ceramic products, frits, enamels and pigments, and carrying out characterisation tests and products control, ensuring that the making process is carried out with the required quality and under the established safety and environmental conditions.

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

### “Manufacturing Processes of Ceramic Mixtures”

The holder:

- Characterises the manufacturing process of ceramic mixtures, relating tools with the products obtained.
- Characterises the operations of receipt, collection, mixing and storage of raw materials, relating procedures with the necessary equipment.
- Performs industrial grinding operations of mixtures interpreting the development of the process.
- Performs mixtures dissolution operations, selecting the variables of the process.
- Performs operations for the preparation of ceramic mixtures analysing the development of shaping operations.
- Verifies the development of the manufacturing process of ceramic mixtures justifying the used techniques and procedures.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### “Manufacturing Processes of Frits and Ceramic Mixtures”

The holder:

- Characterises the process of preparation of frits and pigments, relating the manufacturing operations, raw materials and finished products and variables of the process with used means and procedures.
- Characterises installations and equipment performance for the storage, dose and mixture of raw materials, relating the operative parameters with the quality of the final product.
- Characterises the operation of frits fusion ovens and auxiliary facilities, relating the operative parameters with the characteristics of the obtained product.
- Characterises the operation of equipment for the calcination and finishing of pigments, relating operative parameters with the characteristics of the obtained product.
- Prepares frits and pigments, relating the variables of the manufacturing process with the characteristics of the obtained product.
- Calculates doses and data referring to the stages of the process, line control, storage and materials consumption, justifying the considered variables.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

### “Processes for the Preparation of Ceramic Enamels”

The holder:

- Characterises processes for the preparation of enamels, relating manufacturing operations and the variables of the process with the used means and procedures.
- Prepares slips and barbotine enamels, relating the equipment performance conditions with the characteristics of the final product.
- Prepares ceramic inks, relating the conditions of equipment operation with the characteristics of the final product.
- Prepares micronized enamels, pelletized enamels and grain enamel, relating the equipment performance conditions with the characteristics of the final product.

- Calculates doses and other data related to the variables of the process analysing its development.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

#### **“Manufacturing Processes of Ceramic Products”**

The holder:

- Classifies ceramic products relating their technical, aesthetic and functional characteristics with their applications and more common consumption areas.
- Characterises the manufacturing process of ceramic products relating installations used with the products obtained.
- Carries out ceramic products shaping operations through the analysis of the variables of the process.
- Carries out enamelling and decoration operations of ceramic products, analysing the variables of the process.
- Carries out smelting operations of ceramic products analysing the development of the process.
- Calculates data referred to the stages of the process, line control, storage and materials consumption, justifying the considered variables and parameters.
- Verifies, in the line, the development of the manufacturing process of ceramic products, justifying the used techniques and procedures.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

#### **“Ceramic Regulations”**

The holder:

- Interprets the international regulations on ceramic products, relating the same with the technical characteristics of concerned products.
- Applies test protocols defined in the international regulations for ceramic products, interpreting the used procedures.
- Interprets tests results of products analysing criteria for acceptance or refusal defined in the international regulations.
- Writes reports on test results interpreting the procedures established in the regulations.
- Organises laboratory resources assessing their importance on the quality and safety of tests operations.
- Complies with the rules on labour risk prevention and environmental protection, identifying associated risks and measures and equipment to prevent them.

#### **“Materials and Ceramic Processes Control”**

The holder:

- Interprets the control plan of materials and the manufacturing process of frits, enamels, pigments and ceramic products, justifying the established instructions.
- Carries out control tests of clayey raw materials and ceramic mixtures, justifying the procedures that must be used.
- Carries out control tests of non-clayey raw materials, frits, enamels, pigments and auxiliary materials, justifying the procedures that must be used.
- Carries out control tests of ceramic products in the manufacturing process, justifying the procedures that must be used.
- Interprets the obtained control data, relating them with the variables of the process.
- Organises laboratory resources, assessing their importance on the quality and safety of control operations.

#### **“Techniques and Tests for the Development of Products”**

The holder:

- Prepares ceramic mixtures, relating procedures and operation variables with the characteristics of the products obtained.
- Obtains shaped cylinders justifying the used techniques and procedures.
- Prepares enamels relating the procedures and variables of the operation with the characteristics of the products obtained.
- Manufactures enamelled cylinders justifying the used techniques and procedures.
- Prepares ceramic inks and apply them relating the procedures and variables of the operation with the characteristics of the products obtained.
- Applies enamels and inks interpreting procedures and variables of the operation.
- Carries out tests on mixtures, inks, slips and enamels, analysing the operation procedures.

#### **“Principles of Electromechanical Maintenance”**

The holder:

- Identifies mechanical elements of equipment, machinery and installations describing their function and influence on the system as a whole.
- Recognises the elements that intervene in pneumatic installations analysing their function and influence on the system as a whole.
- Recognises the elements of hydraulic installations describing their function.
- Identifies the elements of electric installations describing their mission on the installation as a whole.
- Identifies electric machinery and the constructive elements that intervene in the assembly of industrial equipment of the sector describing their function and applications.

- Applies first-level maintenance relating procedures used with the involved equipment and installations.

### **“Professional 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 protection action of the Spanish Health Service in view of the different eventualities covered, 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 Manufacture of Ceramic Products.

### **“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 it to service provision.
- Applies labour and ethic habits in his/her professional activity according to the characteristics of the job position and the procedures established by the company.
- Performs receipt, storage and dispatch operations of raw materials, auxiliary materials and ceramic products, in accordance with established procedures and instructions.
- Prepares machinery, equipment, tools and auxiliary services, adjusting their mechanisms and accessories in accordance with established procedures and applying rules on labour risk prevention and environmental protection.
- Performs the most significant manufacturing operations of ceramic products, applying rules on labour risk prevention and environmental protection.
- Participates in the production control applying techniques and methods established by the company.
- Participates in the first-level maintenance operations, ensuring high-performance and safety conditions of equipment.
- Applies procedures for the treatment and/or management of emissions, effluents and residues produced in the manufacturing processes of ceramic products.

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

The Technician in Manufacture of Ceramic Products works in the production area of small, medium and large enterprises. S/he is autonomous as regards his/her tasks and objectives set by higher technicians, and coordinates small work teams.

The most relevant occupations or jobs are the following:

- Enamels and ceramic inks preparation department manager
- Raw materials receipt, storage and control manager
- Mixtures grinding manager
- Disintegration manager in the ceramic industry
- Mixtures department manager
- Casting line manager
- Extrusion line manager
- Plate moulding machine driver
- Enamelling line manager
- Decoration line manager
- Intermittent ovens and non-automatic continuous ovens manager

- Baker of continuous ovens with automatic baking control
- Process manager in small ceramic plants
- Ceramic, porcelain and pottery grinding and polishing machine manager
- Classification and packing manager

### **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 454/2010, of 16 April, according to which the diploma of Technician in Manufacture of Ceramic Products 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

