NOTIO ASSOCIATION

NOTIO is the management entity of the **Clay Technological Center of Castilla-La Mancha (CTAC).** NOTIO a private, non-profit organization whose purpose is the Research, Development, Innovation, Demonstration, Dissemination and Training that develops its activities in the following fields:

- Building Materials (ceramics, aggregates, natural stone, etc.).
- Sustainable construction (efficiency energy, circular economy, new materials and processes).
- Territorial planning and Natural Resources (G.I.S, mining, geophysical surveys, etc.).
- Environment (hydrological characterizations, soil decontamination, etc.).

NOTIO Association was constituted in January of 2017 and is registered in the **National Register of Associations**, Section 1 with the national number: **612522**.

NOTIO is a member of **FEDICAM (Federation of Innovation Entities of Castilla-La Mancha)**.

Our HUMAN TEAM is our main resource.

- **Laboratories:** The laboratory staff accredits more than 15 years of experience in both the execution of tests and management of laboratories (commercial and quality). The laboratory is accredited by **ENAC (National Entity of Accreditation) with number of accreditation: Nº: 1287/LE2422** in accordance with **EN ISO/IEC 17025 standard**. This mean the international recognition of the capacity and confidence of our test laboratory in the following fields:
    - Clay products.
    - Aggregates.
    - Natural Stone.
- **Services:** The "know-how" of NOTIO's staff and the direct relationship with customers is a value for the provision of technological services demanded by the market.
- **Research:** The Clay Technological Center (CTAC) participates in preparation, coordination and execution of regional, national and international RDI projects (LIFE program, VII Framework Program, Horizon 2020, RFCS, etc.).

CONSTRUCTION MATERIALS LABORATORIES

The increase of the requirements for the construction materials used in building and civil works, jointly with the high competition in the sector, it has produced a rise in the required quality to these products by the market and the building regulations.

With the aim of that our customers can be able to demonstrated the conformity of their products with the technique regulations for the protection of consumers and environment, our laboratories have the equipment and team to perform the required tests for the building products.

Furthermore, the laboratory is accredited by **ENAC (National Entity of Accreditation) with number of accreditation: Nº: 1287/LE2422** in accordance with **EN ISO/IEC 17025 standard**. This mean the international recognition of the capacity and confidence of our test laboratory in the following fields:

- Clay products.
- Aggregates.
- Natural Stone.

Link to the ENAC Technical Annex of the laboratory

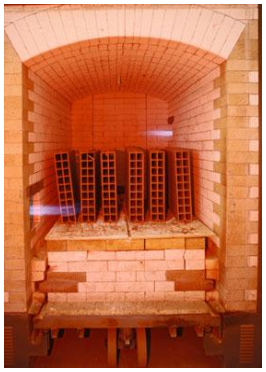
- **Accreditation Nº: 1287/LE2422.**
- **Technical annex.**

ENAC trademark in the laboratory tests provides to NOTIO´s customers the following advantages:

- Trustworthiness of the test results.
- Possibility to comparison of results.
- Support to the decision making.
- Favourable positioning in face of litigations.
- Differentiation in face of competition.
- Opening of markets.

Also, the laboratory is declared as **Test Laboratory for the Building Quality Control** by the Regional Government of the Castilla-La Mancha (**Nº: CLM-L-041).**

Below is a summary of laboratory tests that are accomplished by NOTIO in its facilities of **the Clay Technological Center (CTAC) in Toledo (Spain).**


AGGREGATES LABORATORY

The Aggregates Laboratory of NOTIO, accredited by ENAC (**Nº: 1287/LE2422**), has the facilities, equipments and experience necessaries to determine aggregates properties in agreement with the National and European legislation:

- **Construction Products Regulation (CPR): CE marking.**
- **Code of Structural Concrete.**
- **General Technical Specifications for Road Works.**
- **General Technical Specifications for Railway Materials –Ballast and Sub-ballast-.**

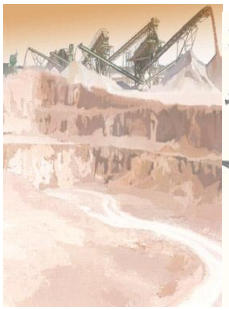
Also, the aggregate sector has the necessity to offer a products with a added value and able to accomplish with the society requirements. In this form, the **Aggregate Area** performs Research and Technological Development projects in the following areas:

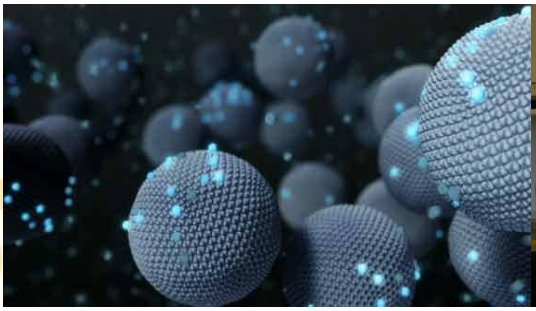
- ***Materials*** *(special granulometry, micronized products, special dosages, etc.).*
- ***Safety and Healthy*** *(determination of dangerous substances in aggregates and in associated processes).*
- ***Environment*** *(valorization and managements of residues, recycled aggregates, etc.).*
- ***Energy efficiency.***

With the aim of help your organization to face the challenges and opportunities of the aggregates sector, we encourage to express your necessities to our organization. In this form, it would be possible to us to offer a customized solutions.

Test and analysis developed:

- **Geometric properties.**
- **Mechanical and physical properties.**
- **Thermal and alteration properties.**
- **Chemical properties.**
- **Concrete aggregates.**
- **Water for concrete.**
- **Masonry mortars.**
- **Others.**




CERAMIC LABORATORY

NOTIO's Ceramics Laboratory is accredited by **ENAC** (**Nº: 1287/LE2422**) in agreement with the standard UNE EN 17025, to make quality control tests of fired clay ceramic products used in the construction sector.

These tests are required by a regulation requirement of the product (CE marking), by an environmental requirement of the manufacture process (CO2 emissions control) or by a quality mark (e.g. AENOR).

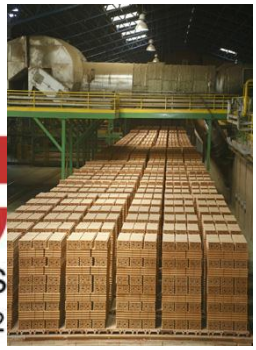
Besides normative tests, the Ceramics Laboratory is used to perform both services and Research and Technological Development projects in the following areas:

- **Pathologies, architectural and architectonic heritage.**
- **Quality of ceramic and building materials (improvement of technological properties of ceramic materials applied in construction, nanotechnology and new ceramic applications, etc.).**
- **Circular Economy (valorization of residues and by-products, optimization of energy consumption in the manufacturing processes, etc.).**
- **Energy efficiency, Environmental Product Declaration (EPD) and Life Cycle Assessment (LCA).**
- **Development of bioclimatic ceramic construction systems.**

Test and analysis developed:

- **General.**
- **Ceramic pavers.**
- **Tiles.**
- **Ceramic blocks.**
- **Ceramic clay blocks lightened.**
- **Cows.**
- **Brick faces.**
- **Ceramic bricks.**
- **Large format bricks.**
- **Ceramic boards.**
- **Roof tiles.**





NATURAL STONE LABORATORY

The Natural Stone Laboratory, accredited by ENAC (**Nº: 1287/LE2422**), has the equipment necessary to perform the tests required by natural stone companies to obtain the CE marking of their products and to follow the applicable legal requirements, in particular the Construction Products Regulation (CPR) and the Technical Building Code (CTE).

Also, the natural stone sector has the necessity to offer a products with an added value and able to accomplish with the society requirements and challenges. In this form, the **Natural Stone Area** performs Research and Technological Development projects in the following areas:

- ***Quality indexes for natural stone*** *(special granulometry, micronized products, special dosages, etc.).*
- ***Architectural heritage and pathologies.***
- ***Environment*** *(valorization and managements of residues, EPD, LCA, etc.).*
- ***Energy efficiency and new developments.***
- ***Monitoring of geophysical techniques*** *(GPR, tomography, etc.) in natural stone quarries (resource estimation, waste reduction, safety in quarrying, geological models).*

With the aim of help your organization to face the challenges and opportunities of the natural stone sector, we encourages to express your necessities to our organization. In this form, it would be possible to us to offer a customized solutions.

Test and analysis developed:

- **General.**
- **Outdoor floor tiles.**
- **Masonry mortars.**
- **Agglomerated stone.**
- **Roofing slates.**
- **Outdoor terraces.**
- **Indoor terraces.**

RAW MATERIALS LABORATORY

The activities of the Raw Materials Laboratory are focused to the chemical and technological characterization of raw materials (clays, sands, feldspars, ores, etc.) with the objective to satisfy the increasing demand from companies of different sectors (ceramic, building, mining, environment, etc.). It is also used to perform RTD projects. The works carried out at the laboratory are related to:

- Study of clay quarries.
- Characterization of samples (clays, ores, etc.)
- Formulation of ceramic pastes.
- Studies of ceramic and building processes.
- Studies of the technological properties of raw materials.
- Improvement of the ceramic and building product properties by raw material selections.

As unique equipment, the laboratory has a Haake Mars II rheometer, an instrumental technique that allows analyzing the rheological behavior of the raw materials and determining the most optimal plasticity conditions for their work.

OTHER LABORATORY CAPACITIES

Nanomaterial laboratory: The main activities of this laboratory include fundamental studies like the morphological, mechanical and electrical characterizations of nanomaterials, nanoparticles and nanostructures and its chemical analysis and the search of new methodologies for the development of new industrial applications of different nanomaterials. The laboratory works also in nanoparticles synthesis and surfaces functionalization.

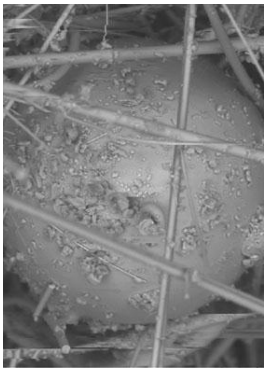
The equipment available allows carry out different studies such as structural nanoporosity characterization (ASAP 2010 Micromeritics Specific Surface Area Analyzer), chemical element distribution studies (SEM HITACHI TM-3000/EDX Brucker Quantax 50) or the particle size determination (Horiba LA-300 Particle Size Analizer).

Semi-industrial Ceramic pilot plant:

CLAY TECHNOLOGICAL CENTER (CTAC) has a **pilot plant** for the manufacturing of ceramic construction products at a semi-industrial scale. This plant enables to carry out the validation of the results obtained from the research works done at laboratory scale, through the fabrication of products at a real scale and in conditions similar to those of an industrial manufacturing process.

The plant is mainly used to carry out valorization tests in the ceramic industry and to perform singular tests required by ceramic companies.

The plant has an extrusion or pressing moulding line, a drying kiln with temperature and humidity control, and a natural gas kiln with temperature regulation and firing atmospheres up to 1150 ºC. These systems enable to reproduce all the phases of an industrial fabrication process.

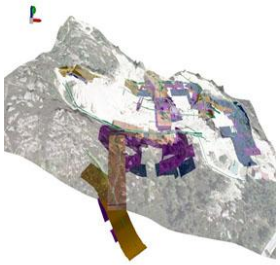
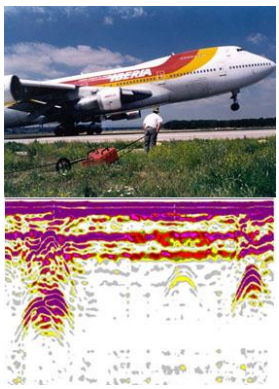




SERVICES

Our main work areas are: (click to go to webpage)

- **Studies of building pathologies.**
- **Energy efficiency**
- **Expert reports in the field of construction materials, architecture or real estate.**
- **Cultural heritage.**
- **Sustainable construction (circular economy, energy efficiency, EPD, LCA)**
- **Territorial planning and Natural Resources.**
- **Surface and underground hydrology.**
- **Environment: soil decontamination.**
- **Training.**
- **Geophysical surveys (GPR, tomography, etc.).**

RDI

NOTIO Association is constituted by a team of professionals specialized in consulting and development of R+D in several technology fields, which is able to help companies and other institutions to develop their activities through the innovation in their processes and products.

The NOTIO work team is constituted by professionals come from both research centers and process development departments with more of 15 years of experience in RDI projects and market input of results.

Likewise, we collaborate with Universities, research centers and high-profile companies which provide reliability and accuracy to our studies and analyses. Our technical team guarantee permanent attention to our customers and partners, within a communicative and participatory relationship.

Our major work activities are focused on:

- **Development of materials and process improvement.**
- **Energy efficiency, sustainability and circular economy.**
- **Waste valorization.**
- **Natural resource, mining and environmental plannings.**
- **Technological foresight.**
- **Sustainable construction.**
- **Cultural heritage.**

NOTIO is also focused on R+D consultancy to companies and other institutions, with the aim of to help for growing through the innovation. NOTIO´s project development and management experience can help companies realize their innovation strategy. NOTIO can provide technical assistance or run the entire project.

In this manner, NOTIO participates together with his partners in preparation and management of funding RDI proposals along worldwide:

- **Regional and National calls.**
- **European and International calls.**
- **Managing of RDI projects.**
- **Administrative and governmental liaisons.**
- **Project tracking.**

Agreements will be on a commercial-in-confidence bases. IPR will be the subject of agreement between the industry partner and other contractors/partners. Our technical team has participated in the preparation, coordination and development of national and international RDI projects (LIFE programme, VII Framework Programme, Horizon 2020, RFCS, etc.) for public and private entities, in the field of:

- **Building materials (development of new materials and process improvement).**
- **Waste valorization.**
- **Natural resource planning, mining and environmental.**
- **Energy efficiency and sustainability.**