



European Innovation Partnership on Raw Materials

Application for a Raw Materials Commitment

Building a harmonized European database on natural stones for the use of construction and restoration stakeholders.

Unpublished

Acronym:

NATUREUROSTONES

Abstract / executive summary:

Natural stones are important raw materials required for construction but also for maintenance and repair of historically, archaeologically and culturally important structures to prevent deterioration due to weathering and use. Sometimes severely damaged buildings may require extensive or complete restoration. The choice of stone should be appropriate in physical and aesthetic terms, ideally from the original quarry. Access to reference materials such as manuscripts, publications and collections of samples is often limited. Easier access is needed by researchers, constructors, funding organizations, architects and other stakeholders when planning and commissioning works that require the use of natural stone for new construction or restoration. To be effective on a European scale, national organizations representing different sectors should work together to make important information about natural stones and their quarry source more widely available and promote awareness of the need to maintain adequate supplies of natural stone of suitable quality.

NATUREUROSTONES seeks to compile and make available the information on stones and source quarries that remains in currently closed databases at national level, with data on mineralogy, geochemistry, natural radioactivity, physical and mechanical characteristics and also the bibliographic references dealing with individual stones in a harmonized and standardized way to promote the construction and restoration industry sectors, and widening the network of researchers working on this issue. Several attempts have taken place so far aiming this general objective in different contexts, but to the knowledge of the applicants no similar deliverables and/or milestones have been achieved.

As an added value, focused on outreach, this proposal also aims at giving publicity to stone collections that some institutions are maintaining, and to join the collections digitally so the information is shared and for transmission of knowledge.

Links to the Strategic Implementation Plan:

- II. Non-Technology Pillar
 - II.C Priority Area: Knowledge
 - Action area n° II.8: EU Raw Materials Knowledge Base

- **1) Appropriate conditions for the development of the EU Raw Materials Knowledge Base (EURMKB)**
- **5) Collaboration with the rest of the world on raw materials information**
- **6) Improvement of data collection**

Objectives of the commitment:

The main objective of NATUREUROSTONES is to build an inter-disciplinary network to provide a range of information on natural stones as raw materials from different sources, in a harmonized and standardized way, in the form of a Europe-wide database of natural stones - the NATUREUROSTONES Database. This will encourage activities of the natural stone sector in recovering after the economic crisis affecting this sector. Exploration, extraction, processing and recycling, trading, development, skills and education are the different areas that will benefit from this consortium. The goal is to strengthen Europe's position on the forefront of natural stone research, within the European Union Raw Materials Knowledge Base. The final, specific objective is to develop a database to supply the information to the interested parties in a harmonized and interoperable way.

Description of the activities:

Natural stones have been used as raw material in construction for centuries. However, even today, in many instances natural stones are not used properly, in either construction or restoration, due to lack of knowledge or lack of access to relevant information concerning the range, character and availability of commercially supplied stones. It is important to know the sources of natural stones available in Europe to select these in preference to those stones imported from non-European countries, which usually are not accompanied by proper information on their nature and even a lack of information on specifications following standards. All the partners involved in this commitment are experts in one or various fields related to stones, producing an interdisciplinary consortium involving academics from the universities (Salamanca in Spain, Torino and Genova in Italy and Coimbra in Portugal); geological surveys (British Geological Survey and Spanish Geological Survey); museums (Muséum National d'Histoire Naturelle in Paris, France, and the Museo Regionale Di Scienze Naturali in Turin, Italy); laboratories (INTROMAC in Spain, laboratory of natural radioactivity in Portugal, and the Slovenian National Building and Civil Engineering Institute in Slovenia); quarrying-related industries (Minas y Geología in Spain, Pierres et Marbres de Wallonie in Belgium) and a consultant.

The main activity will be to assemble as much of the relevant but currently scattered information as possible from the countries involved, with the idea that the network will widen during the time that the commitment will last. For this reason, the first activity will be to list the databases on natural stones available at national and regional level. Also, we will seek possible ways to fund complete characterization of natural stones that are lacking important information (e.g. through national and European project calls). At present, the IUGS working group HSTG (Heritage Stone Task Group) is working on the compilation of data of important natural stones that have been used for centuries in the construction of the built heritage. This information should be part of the common database. Another important activity will be to give light to the natural stone collections that are maintained by some institutions. These are important not only for knowledge about the different stones at national and international level, but also as an outreach activity for general public to learn to appreciate the value of individual natural stones. Therefore, a list of collections of natural stones around Europe will be established to give appropriate diffusion, as important complement of the final database. The evolution of the activities will be reported regularly in the national and international meetings where the partners coordinate sessions frequently or in those specific sessions for construction and building materials, where we will contribute (e.g. IGC 2016, EMC 2016, EGU 2017), publishing our results regularly with the objective of engaging more partners into our project, including European

Standardization Bodies.

If funding is available through research budget, a major activity will be to organize a meeting with all the partners involved in the commitment, with the objective of canalizing synergies and elaborate common research proposals to advance in the characterization of stones, increase the information available, and the diffusion of the database for its public use. Otherwise, ICTs will be used to maintain the contact and evolve in the commitment to reach its objectives.

Description of the expected impacts:

The implementation of this commitment should bring substantial benefits to the European Union Raw Materials Knowledge Base area, and other areas of the Knowledge, skills and raw materials flow priority area, such as Health, Safety and Environment, through the information on e.g. natural radioactivity in natural stones, their quarrying and their use, and Skills, Education and Knowledge, increasing the expertise levels of Europe by making available wide information on natural stones as raw materials for construction and restoration. The availability of all this information will also add to the transparency of EU natural stones for trading, including specific and valuable information to compete with other products lacking such detailed information, increasing therefore the knowledge of EU natural stone for different stakeholders.

Our commitment will be materialized in a most important deliverable: a common standardized database of European natural stones that will contribute to the use of European resources (i.e. natural stones) reducing imports of low quality raw materials and promotion of exports by improving information available as added value of our products. At the same time, it will assist to support any possible European Union initiative to give protected designation of origin status for important types of European stone, contributing towards putting Europe at the forefront in the natural stone sectors by making Europe a leader in the capabilities related to the use of appropriate material both in construction and restoration.

Expected innovation outcomes:

New services
New ideas to the market
Societal innovation

Name of the coordinating organisation:

University of Salamanca

Country:

Spain

Entity profile:

Academia

Role within the commitment:

The university of Salamanca (USAL), through its research group "Characterization of Geomaterials" (CHARROCK) will coordinate the action to gather the information on Spanish natural stones but also the stones from around Europe that have been subjects of our research (e.g. through the HSTG). USAL will also seek for funding sources to complement the necessary data on all aspects that can be analyzed either at its own labs or partners' equipments.

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Other partners:**Name of the organisation:**

INTROMAC

Country:

[Spain](#)

Entity profile:

Governmental/public body

Role within the commitment:

INTROMAC is a technological center working for different industrial sectors, including construction, mining and quarrying sectors. This center is expert in testing materials, both for construction and restoration, and its role will be the advise on the fields that the local databases are lacking and what the natural stone industrial sectors need for their improvement in the market. INTROMAC will help increasing technical data for Spanish stones.

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Name of the organisation:

Minas y Geología

Country:

[Spain](#)

Entity profile:

Private sector - SME

Role within the commitment:

Minas y Geología is a SME located in Salamanca, with strong tradition in activities in metallic mining and natural stone quarrying. Its involvement in the consortium will be related to the most applied impact: the transfer of knowledge. The company will be informed on the different aspects of the database to send the feedback on the importance of the content of such a database. It will also supply available material for testing whenever needed.

Contact email**address:**

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Name of the organisation:

Spanish Geological Survey (IGME)

Country:

[Spain](#)

Entity profile:

Governmental/public body

Role within the commitment:

The Spanish Geological Survey (IGME) is maintaining a national database that is fed by various

members from all over the country that are part of the network CONSTRUROCK. The role in the consortium will be related to the flux of information on the Spanish natural stones towards the other partners to be part of the common database. IGME will provide data about natural stones and quarries in Spain. It will also be link to other Geological Surveys.

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**Name of the
organisation:**

University of Turin (UNITO)

Country:

[Italy](#)

Entity profile:

Academia

**Role within the
commitment:**

Academics and technicians of this university are familiar with natural stones from around Italy, which is one of the most important countries in Europe regarding use of natural stones. They will support the commitment providing data on Italian stones and their expertise in characterization and description of employment of stones in historic and today's building, and also on outreach activities to involve the general public using social media.

Contact email

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**Name of the
organisation:**

University of Coimbra (UC)

Country:

[Portugal](#)

Entity profile:

Academia

**Role within the
commitment:**

Members of the university of Coimbra are also members of the research group CHARROCK, at USAL. Their major role in the research has to do with information on natural radioactivity in natural stones. These data, besides innovative, can add an extra value to European natural stones when considering their export outside Europe. UC will also provide data about natural stones and quarries in Portugal.

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apereira@dct.uc.pt

**Name of the
organisation:**

British Geological Survey (BGS)

Country:

[United Kingdom](#)

Entity profile:

Governmental/public body

Role within the**commitment:**

The BGS has a large collection of UK natural stone samples and has designed and populated a database of stone for the UK. This database contains information relating to each natural stone, quarries, samples, and the buildings in which each stone has been used. As such, the design of this database could be used as the basis for the proposed NATUREUROSTONES database. BGS is also involved in the EPOS project, adding experience in integrating data.

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Name of the**organisation:**

Muséum National d'Histoire Naturelle

Country:

[France](#)

Entity profile:

Governmental/public body

Role within the**commitment:**

This museum has a leading activity in outreach diffusion on the use of local stones in building important constructions in France. Its role will be related to the promotion of the need of a common natural stone database for wider use, to promote the use of local natural stone when available or at least European substitutes if in need of these raw materials. The museum will also provide data about natural stones and quarries in France.

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Name of the**organisation:**

Pierres et Marbres de Wallonie

Country:

[Belgium](#)

Entity profile:

Governmental/public body

Role within the**commitment:**

This partner is active in research and quarrying of important natural stones in Belgium through the private involvement on their management. Besides, they have experience participating in natural stones expert meetings and their role will be based in setting up the state-of-the-art of these networks and widen the list of contacts to feed the NATUREUROSTONES database. They will also provide data on natural stones and quarries in Belgium.

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Name of the organisation:

Slovenian National Building and Civil Engineering Institute (ZAG)

Country:

[Slovenia](#)

Entity profile:

Governmental/public body

Role within the commitment:

ZAG, through its Laboratory for Concrete, Stone and Recycled Materials, will provide information on Slovenian natural stones as well as other European stones which can be provided by producers approval. As being Technical Assessment Body (TAB) for all fields of products and requirements for a TAB, as are listed in the CPR (EU Regulation No. 05/2011), data will extend to stone products and kits which are not in the scope of CEN TC 246.

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Name of the organisation:

MUSEO REGIONALE DI SCIENZE NATURALI

Country:

[Italy](#)

Entity profile:

Governmental/public body

Role within the commitment:

The museum is site of important collections of natural rocks used over the centuries for historical and contemporary buildings, in Italy and abroad. Its role will consist in supplying information on stones exploited in the Alpine region and in the main Italian quarry districts. Galleries of the Museum will be used for the setting permanent and temporary exhibitions, useful for the transmission of knowledge relative to cultural significance.

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Name of the organisation:

Private consultant

Country:

[Italy](#)

Entity profile:

Other

Other:

Private Consultant

Role within the commitment:

Piero Primavori is an international private consultant. He works privately, as freelance consultant on natural stones. His specialization includes technologies used in dimension stone

quarries and processing plants. He is familiar with natural stone international demands and his role will be to advise on the market information needs. He will supervise the information on the NATUREUROSTONES database from the construction market point of view.

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**Name of the
organisation:**

Department of Earth, Environment and Life Sciences, Genova

Country:

[Italy](#)

**Role within the
commitment:**

The Department hosts an interdisciplinary research group that addresses the characterization and quality requisites of ornamental stones and roofing materials, new test methods, innovative methods for restoration (patented), reuse of stone waste and optimization of related processes (e.g. cutting tools). The Department owns a rich historical and modern stone collection. Information from our labs will feed the NATUREUROSTONES database.

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Total indicative budget:

130 000

Existing EU contribution:

No

Period to implement the commitment:

Friday, 1 July, 2016 to Sunday, 1 July, 2018

Source URL: <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/building-harmonized-european-database-natural-stones-use-construction-and-restoration>