

# STONEPLACING

**Improve qualification and employability of stone placing workers by implementing a common European curriculum with the support of ICT based tools**

## Project information

Project acronym: STPLACE

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## Executive Summary

The main target groups of the project are young people following courses related to stone placing in VET organizations, as well as workers in continuous training and technicians working in the placement of stone across Europe.

The general aim of the project is to increase the skills of workers in the field of placing stone, particularly in placing different type of floors and walls in buildings and urban environments. This will contribute to increase the quality of the final work. Environmental sustainability will be also targeted, by promoting the use of recyclable and eco-friendly materials.

The project is coordinated by the German Association of Stone (DNV-Deutscher Naturwerkstein Verband), highly involved in fostering the quality of the placement of stone products, as well as in the defence of life cycle assessment (LCA) of natural stone and the significant ecological advantage of the stone cover and pavement compared to other materials (eg. glass, brick) with higher environmental impact.

Euroroc, the European Federation of Natural Stone Companies, grouped under the name "Naturstein / Natural stone" will contribute in ensuring that the project's main products meet the current and real needs of the industry in Europe, and in disseminating the project's results through all national and regional associations.

The Technological Centre of Marble (Murcia), with a high technological level in stone manufacturing and placing, three different VET organizations, from Croatia, France and Sweden, together with a specialist company complete the consortium, giving the project a transversal value, not only from the geographical point of view, but also gives a multi-agent character.

The methodology designed to achieve the project's objectives include three main steps:

- 1) Carrying out research consisting of collecting information regarding the existing norms and regulations in Europe on the placing of stone in buildings and public spaces, as well as for those products where no norms are defined (an important number), to find out which are the different methods and procedures used to place them in the involved countries, which represent the main stone areas across Europe. It also includes organizing a seminar with experts.
- 2) The second step is the development of the curriculum and multimedia training material, consisting of a Multimedia Resource Centre and Flash Cards.
- 3) The third step is to test and validate the curriculum and multimedia training resources. This stage includes the implementation of two pilot courses, one in France and one in Croatia.

During the first year, after the initial stage of performing the survey, partners have already collected materials to include in the Multimedia Resource Centre and have developed a large part of its content. Most of the materials to be included in the Flash Cards have also been produced. The main task for the second year of the project will be the IT development of both multimedia products, perform an implementation of the course using the multimedia materials developed as part of the the project, in order to test and validate them, and mainly the dissemination of the project and its products and results.

Dissemination is considered a key aspect of the project and is being performed throughout the entire project lifecycle, although it will be the main focus after the main products are developed and freely available on the internet. At the end of the project, the consortium will develop an evaluation plan to ensure the permanence of the products and results after the project lifetime.

The website of the project is [www.stoneplacing.eu](http://www.stoneplacing.eu)

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# 1. Project Objectives

The general aim of the project is to increase the skills of workers in the stone placement industry, particularly in placing different type of floors and walls in buildings and urban environments. This will contribute to increase the quality of the final work. Environmental sustainability is also targeted, by promoting the use of recyclable and eco-friendly materials.

The specific objectives allocated to the project, which will allow the consortium to achieve the mentioned general aim are:

- ✓ To research the most suitable placement methods for the main stone products being used across Europe, analysing the results, selecting the best practices and deciding on which ones - including the training materials - should be produced within the project.
- ✓ To make available the information about the defined best methods of placing natural stone on site, through two main multimedia tools: Multimedia Resource Centre and Flash Cards.
- ✓ Promote those placement methods that prolong the life of stone products, especially those that allow a second use (without going into the recycling chain) according to the criteria of environmental sustainability.
- ✓ Promote and disseminate the project and its products within the stone industry and VET organizations giving courses in this professional area.

The idea of the proposal has arisen from the conclusions reached at various meetings of the European Association of Natural Stone (Euroroc), aimed at solving the multiple demands of the national associations in Europe. Member companies of these associations were aware that placement has a big influence in the market of manufactured stone products: it can add extra value to the product (when it is placed following the best practices) or make it appear to be an "unsuitable" material (when the placement procedures are not appropriate).

The project will collect and produce information and training materials to allow stakeholders in the field to improve the quality of the stone placing works. VET organizations will have available a quality, up-to-date material to improve their skills and competences in stone placing techniques across Europe, as well as some easy-to-use materials (Multimedia Flash Cards) to bring to the site and give them information on how to place the most common stone products (cubes, stone for facades, pavements, etc.)

## 2. Project Approach

The methodology designed to achieve the project's objectives include three main steps:

1) The project starts by carrying out research on the existing norms and regulations in Europe on stone placing in buildings and public spaces. For those products where no norms are defined (an important number) the consortium will find out which are the different placing methods and procedures used the involved countries, which represent the main stone areas across Europe.

A seminar will be held inviting professionals and companies in the field to discuss those aspects that the consortium considered important in the light of the results of the research performed, to finally define which will be the selected method, where norms are not fixed.

2) The second step is the development of the curriculum and multimedia training material, which include three main milestones:

- Produce a curriculum for a "stonemasonry placing course" to be implemented in the European VET organizations
- To collect and develop training material for the online resource centre, which will facilitate the online and in-the-classroom learning; and for the Flash Cards, which will facilitate the placement of the main stone products on site.
- The IT development of the training material for the Resource Centre and Flash Cards, using multimedia resources: drawings, animations, audio and video recordings, etc.

3) The third step is to test and validate the curriculum and multimedia training resources. This stage includes the implementation of two pilot courses, one in France and one in Croatia.

The research activities performed have highlighted important information regarding the placing methods in use across Europe. There are EU and national regulations for a relatively small number of products, but for those without regulations there are codes of practices in percentage large percentage of countries. The consortium have widely discussed those methods where the codes of practice differ in the different countries involve. These discussions have also been brought to the seminar attended by technicians in stone placing from the different countries involved. Finally they came to a common proposal for the method to be included in the multimedia products.

A number of suitable materials to support the training have been collected in the involved countries, but the consortium have finally to develop most the content for the Multimedia Resource Centre and for the Flash Cards themselves due to the lack of quality and suitable materials.

The testing of the products will be performed during the second year of the project.

The dissemination of the project and the proposed products has been performed already during the first year of implementation of the project, mainly during the contact with stone industry for the performance of the research. However, this will be increased during the second year of the project, once the multimedia results are ready, in order to make them available to the main stakeholders in the field, particularly the stone industry, VET organizations and authorities.

Regarding quality control, the consortium include a partner whose main task is ensuring that the project is implemented according to that which is stated in the application, and also that the quality of the products developed follow the quality standards allocated initially in the application. Work plan also includes external evaluation of the multimedia products.

### 3. Project Outcomes & Results

During the first year of the project, the consortium developed the following products:

- 1) Sheets with the different placing methods used for placing the main stone products. These sheets state whether the methods proposed in the norms are approved by EU, or by national regulations or codes of practices. Where the methods differ in the involved countries (a small number) - partners in the projects have widely discussed which was the best method and proposed it for inclusion in the project. This discussion was brought also to the seminar held in Germany with experts from different countries represented, in order to get further opinions thereof and ensure that the selected procedure is that which best meets the needs of the company and reflects the reality of the stone market in Europe.

Environment protection was also taken into consideration for selecting the placing method where regulations have not yet been published.

- 2) Report with the defined skills, competences and knowledge required for placing the stone products. This report compiles the main skills and competences required for properly performing the stone placing methods selected for inclusion in the multimedia materials. Its content is based on the results of the study performed during the first stage of the project and has an European approach, being focused on meeting the needs of the European companies. This report will be promoted in the European organizations giving courses in this professional field.
- 3) Stone Placing Course Curriculum. It is developed to meet the needs of students in initial vocational training and workers in continuous training in European countries. It will be promoted in schools where stone related specialities are taught, and also by the European companies' associations and other organizations giving continuous training courses. The curriculum includes the placement of the most common stone products: ashlar and pavers/cubes, natural stone elements and stone blocks, ventilated facades, inside and outside pavements, tomb stones, kitchen tops, etc. It also includes the complementary works related to placing the stone, such as preparing mortars or preparing the joining. But the final structure and content have been decided by the consortium after discussions in the general meetings, taking into account the importance of the related stone product and the need of the sector for defining the standards for the placement of this particular product.
- 4) The website for the project ([www.stoneplacing.com](http://www.stoneplacing.com)). It was produced at the beginning of the project, and will be adapted once the multimedia material is produced, in order that they both match each other, mainly from a design point of view.

The website, besides holding the multimedia products, will also serve as a dissemination means. The publicity performed already and to be carried out during the second year will refer to the website, bringing as many visitors as possible.

- 5) Online Resource Centre. Its main aim is to support the implementation of the produced Stone Placing Course. It will use multimedia resources: drawings, animations, video recordings, pictures, etc. It is fully interactive in order to make the user take part in the learning process as much as possible. This material is extremely important in the sector, due the stone industry not having modern materials. Even the few existing books, most of which are quite old, and many of the processes represented are no longer used.

Most of the content has been produced already and some multimedia resources (pictures, videos) have already been collected. The IT company in charge of the IT development of this product is

currently working on the development of its main framework. Next, after this framework has been approved, the production of the tool will be started.

- 6) Multimedia Flash Cards. These will clearly explain, using graphic multimedia material (video, drawings, animations, pictures), how to place the most common stone products. There will be general sketches and more detailed ones. Companies will use them when sending their workers to place the stone products. These cards will be freely available on the website of the project and can be used online, directly, or downloaded to a smart phone. They will be compatible with the main smart phones, both Apple and Android systems.

The content of the Multimedia Cards has already been developed by the teachers and professionals from the consortium organizations, and the IT production will be carried out by IT specialized companies, under the supervision of AtinServices, who have a broad experience in the coordination of the development of IT based training tools.

## 4. Partnerships

The German Association of Stone (DNV-Deutscher Naturwerkstein Verband), coordinator of the project, is highly involved in fostering quality placement of stone products, as well as in the defence of life cycle assessment (LCA) of natural stone and the significant ecological advantage of the stone cover and pavement compared to other materials (e.g. glass, brick) with a higher environmental impact. This work is supported by Euroroc, the European Federation of Natural Stone Companies, grouped under the mark "Naturstein / Natural stone". The objective of this federation is to coordinate issues of common interest, find solutions and defend the interests of European national associations of stone companies within the European institutions. In this project they are providing an important support in making sure that the main project's products (curriculum, Multimedia Resource Centre and Flash Cards) meet the current and real needs of the industry in Europe, and disseminating the project's results through all national and regional associations.

In the same direction, the Technological Centre of Marble (Murcia) works with the same interests and provides highly technical knowledge to the project, bringing to the project the knowledge of the most important marble areas in Europe, both for quarrying companies and manufacturing companies. This region produces the most sold marble in the world, called, Crema Marfil.

In order to facilitate management of the project, AtinServices has entered the consortium, with experience in the coordination of projects related to natural stone, located in Galicia, a Spanish region with high volume of extraction, processing and placing / installation of granite . This consultancy has previously coordinated a number of projects related to natural stone. They bring a high expertise in the development of multimedia tools for education to the project. AtinServices is in charge of the general coordination of the project and the multimedia products.

Also, for all training aspects involved in the project, three different levels of educational institutions with prior experience in the development of educational materials are taking part in the project: Institute de la Pierre- Compagnons du Devoir (France), which has already developed different training materials related to the stone placing in France and which is playing an important role within the project ensuring that the approach and content meet the needs of students in initial vocational education and training; Stenforsaskolan (Sweden), bringing to the project the knowledge of Danish stone companies, big producers of granite, which represent the reality and needs in Scandinavia, an important area for granite production; and Klesarka Skola, locate in a region of Croatia where marble is the most important economic resource. It is the only Croatian school giving courses in natural stone dressing. Finally, Concept Consulting will monitor and control the work progress and products, following the accomplishing of the activities by involved partners, and supervise the quality of the project's development as a whole.

## 5. Plans for the Future

After the initial stage of performing the survey, partners have already collected materials to include in the Multimedia Resource Centre and have developed a large part of its content. Most of the materials to be included in the Flash Cards have been also produced. The main task for the second year of the project will be:

- 1) IT companies will work in the technical development of both multimedia products, Multimedia Resource Centre and Flash Cards. Partners will supervise the IT work, giving feedback continuously on the materials being developed, as well as in the promotion and dissemination of the project and its products and results.
- 2) Croatian and French partners, both of which are schools giving courses in stone-related fields, will perform an implementation of the course using the multimedia materials developed under the project, in order to test and validate them.
- 3) The dissemination of the project and its products and results will be the main task for consortium partners during the second year of the project, particularly after the main products (Multimedia Resource Centre and Flash Cards) have been produced; when these other tasks are finished the consortium will focus on promotion and dissemination activity.

The results will be mainstreamed in the stone and the educational (VET) sector. The target group and potential end-users have been involved in the project from the beginning, during the researching stage. Industry associations participating in the project (Euroroc and DNV), together with Technological Centre for Marble (CTM), will be the link with stone companies. Educational and training organizations involved (Klesarska, Oistragoinge, Le Compagnons du Devoir) will be the link with VET organizations at different levels. AtinServices will be in charge of the dissemination of the project via the Internet and to the numerous partners it has been working with in other projects related to the stone industry.

- 4) Exploitation strategies will be developed during this second year of the project. Besides the maintenance of the project website, the consortium will take decisions to ensure the maintenance of the main dissemination means on the Internet, such as groups and posts in social networks, YouTube channels, etc.  
The individual aims of most partners (industry associations, training organizations, technologic centres) will ensure that they remain involved in the continuous promotion and maintenance of the site and all materials on the Internet, including in social networks. However, the consortium will produce a detailed plan for this maintenance and for its further promotion and dissemination after the project cycle has expired.

## 6. Contribution to EU policies

The project strengthens international cooperation among heterogeneous countries and institutions, which gives a high European value to its results. Stone manufacturing is an extremely globalized market, whereas the placement of those products still has a very localized approach. The European approach of this project, whose content will be based on the best European practices, will contribute to create a real and effective European market for stone companies. The consortium, as already mentioned above, is also taking special care to include environmental protection regulations and practices in the materials being developed.

The unity of the market, since the Treaty of Rome, not only provided political integration, but the homogenization of education: As the Bologna Declaration regulates higher education, it is necessary to advance the professional standards and the continuous educational training (ECVET); our project provides common content in the various countries, facilitating the mobility of both students and workers. The mobility of workers is a fundamental right of European citizens, but in this industrial sector, without common criteria for placing of the stone or quality, this right is difficult to exercise beyond the country, which means that in the reality workers find it extremely difficult to access jobs in other countries. This is particularly important in the current economic situation, where a number of workers in construction sectors are trying to get a job in the Northern countries.

The project falls within the specific objective 'a' of the LdV program, '*To contribute to the development of quality lifelong learning and to promote high performance, innovation and a European dimension in systems and practices in the field*'. The results of the project, mainly the curriculum for the placement of stone products, Multimedia Resource Centre and Flash Cards, to be used by people in VET organizations and workers in the companies, will contribute to improving the quality of the education systems. They are totally innovative ICT-based materials, produced based on a European approach by a European partnership, giving them a European dimension.

The project also refers to the specific objective 'h' of the LdV program, '*To support the development of innovative ICT-based content, services, pedagogies and practice for lifelong learning*', as the main results, Multimedia Resource Centre and Multimedia Placing Cards, are innovative ICT-based tools which will be used to support the training process in VET organizations across Europe.

Regarding the *Specific Objectives of the Action*, this project addresses objective 'b', "*To support improvements in quality and innovation in vocational education and training systems, institutions and practices*". It will contribute to improve the quality of education in VET organizations related to training in the natural stone industry, which is a sector where, despite representing great value in term of turnover, the number of schools is very low and most of them give an education based on traditional techniques and using traditional resources, meaning that they often do not respond to the real needs of the stone industry.

It refers also to objective 'c' of the action, "*To enhance the attractiveness of vocational education and training and mobility for employers and individuals and to facilitate the mobility of working trainees*". PLACINGSTONE tackles the problem by highlighting and standardizing the most suitable techniques to place the different stone products from a European approach and with a European dimension. It will contribute, therefore, to enhance the mobility for employers and individuals, as well as for workers.

As for Operational Objectives of the Action, the Stone placing project refers to number '2', '*To improve the quality and to increase the volume of co-operation between institutions or organisations providing learning opportunities, enterprises, social partners and other relevant bodies throughout Europe*'. The consortium built to perform the activities of the project includes the main stakeholders related to training in the stone industry, VET organizations, Technology Centres and Industry Associations. These two years of cooperation are allowing these main stakeholders to share their knowledge and expertise, to work together in the performance of the research and in the production of the training resources. It is strongly enhancing cooperation between them.

The project addressed primarily the priority 3, '*Developing Vocational Skills considering the labour market needs – New Skills for New Jobs*'. It will start by researching those real needs related to the placement of the stone in the involved countries, which are in general different than those traditional

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ones, due to the currently used stone products and the techniques used to manufacture and place them are also different.