DURABLE TRANSPORT INFRASTRUCTURES IN THE ATLANTIC AREA

NETWORK

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All Institutions or individuals within the DURATINET area are invited to participate in this Network as members of:

- Project Stakeholders group
- Atlantic Area Cluster "Green and Smart materials"

Further information can be obtained from the website or by email to Project secretariat:

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ACESSIBILITY & TRANSPORTS

ATLANTIC AREA Transnational Programme

Investing in our common future

European Union
European Regional Development Fund

CONTEXT

The implementation of the UE Common Transport Policy will lead to the construction of new transportation infrastructure as well as the modernisation of existing infrastructure in order to adapt them to become part of an European integrated transport system.

This policy has particular relevance to the Atlantic Area due to its strategic position. Much of the transport infrastructure in this region are in a severely deteriorated condition due to the high aggressiveness of marine environments. Owners and managers of ports, highways and railways infrastructure are faced with increasing maintenance costs for their structures mainly due to materials damage.

The fails of repairs is also a frequent occurrence. The performance of the materials and repairs systems is critically dependent on site and installation conditions. Each repair case is different and it is difficult to generalise and to draw general conclusions regarding the best solution. What is really important is that everyone involved in structures maintenance has a good level of knowledge in the new methodologies in this field.

The focus of DURATINET project is to create a network of excellence to facilitate the exchange and transfer of knowledge on the durability, environmental sustainability and safety of transport infrastructure in the Atlantic Area.

This project is a pioneering Atlantic Area initiative that have also the focus to encourage the adoption of joint strategies to preventing deterioration and optimising maintenance and repair / rehabilitation of transport infrastructure. These strategies will have in consideration the service life costs reduction and also the emergent needs on the use of new materials and repair products with less negative environmental impacts. New cooperation to promote the joint R&D and the use of “Green and smart structural materials” will be also a relevant project strategic objective.

The DURATINET consortium expect that the project benefits to the transport infrastructure management will also represent an effective contribution to make the Atlantic Area more attractive as placed to live, work and carry out competitive business.

OBJECTIVES

Five main OBJECTIVES were defined in the project:

1. To produce guidelines on the durability requirements of concrete and steel infrastructure, the inspection methods for diagnosis of damage, the repair materials and systems and on the methodologies for optimising maintenance.
2. To create new competences in infrastructure design, construction and management through the creation of several actions for knowledge dissemination and the organisation of courses and workshops for owners, managers, contractors and repair materials producers.
3. To stimulate the application of harmonised European standards for repair and to identify the requirements for applied research, in particular on research topics concerning the quality control of new repair products and on the rehabilitation processes resulting from their application.
4. To promote the development and the use of “green and smart” structural materials and repair products incorporating nanotechnology and using recycled materials and by-products, claiming reduced energy needs during production and application and with increased long-life performance without being hazardous for application technicians or users. This will be facilitated through the creation of a new Atlantic Area Cluster “Green and Smart Materials”.
5. To create DURATINET web-tools (the DURATINET website and the DB-DURATI database) to facilitate the exchange of information within the project and with the wider technical and scientific community. The website will help to generate and disseminate knowledge on the performance of materials and on the inspection/damage diagnosis and repair systems. The DB-DURATI will store information on the performance of materials from real structures, useful for the benchmarking of service life models and for aiding decision-making relating to the selection of reliable structural maintenance and repair strategies.

RESULTS

Expected RESULTS/DELIVERABLES

- Guidance manuals on reinforced concrete and steel durability, inspection and diagnosis of damage, repair materials and methodologies for optimising the maintenance of infrastructure.
- Technical reports on performance of new repair materials and systems.
- State-of-the-art reports on “green and smart materials” in construction
- Website for wider dissemination of knowledge on reinforced concrete and steel in transport infrastructure maintenance/repair.
- Database on materials performance / service life modelling
- Atlantic Area Cluster on “Green and Smart Materials”.

The DURATINET project results will interest mainly to:

- National and Regional Authorities responsible for the management of road, railway and waterways infrastructure
- Other private owners of structures
- Structural and materials engineers
- Researchers in repair materials, new structural materials and in general in material durability
- Consultants in asset management and maintenance
- Contractors and companies involved in inspection and repairs.
- Repair materials suppliers and developers