seamatter

1st Project Newsletter: November 2013

SEAMATTER began on the 1st of September, 2012 to find demonstrative solutions and validate the reuse of coastal algae and seaweed accumulations as raw materials in the composites industry. (LIFE+11 ENV/E/600). The project is coordinated by AITEX and the project partners are Coastal Ecology Institute IEL (Spain), University of Perugia (Italy) and Association of Textile Entrepreneurs of the Valencia Region ATEVAL (Spain)

OBJECTIVES

SEAMATTER LIFE project intends to solve the environmental problem of the algae and seaweed accumulation in the coastal while validating the best collection and transport management method for these natural wastes. This particular kind of natural residues will find application in non-woven textile industry so materials derived from marine biomass will become sustainable textile reinforcements suitable to be implemented in composite industries, specifically as acoustic panels in buildings.

PROGRESS !

During the first year of the project the actions developed have been:

- **The study of the current situation of the management of algae and seaweed deposition wastes from the coast.**

In this study, it has been reviewed the procedures for collection, transportation and cleaning procedures. For these tasks has been necessary to contact with the different municipalities and companies who are in charge in the management of the wastes algae.

It is important to mention that nowadays the management of this kind of wastes have high economic costs: as an example, managing 1Tn of algae wastes

cost 100€. Regarding the environmental problems, these kind of wastes are accumulated in landfills

- **Optimization of the method of management of the algae/plants and seaweed deposition wastes from the coast**

In order to define the best solution for collecting the marine wastes from the coast and to suggest techniques for transport and storage the algae wastes, some entities which work on the management and collection of Posidonia has been contacted. Once the process will be well know, a pilot experience will be proposed where the most optimum technological solution for the management of the algae wastes will be fixed up by means of technological improvements that will allow the correct disposal of the generated by-products when collecting the algae and other marine wastes from the beach.

- **Definition, selection and characterization of the properties of algae wastes to obtain nonwovens**

The main activities carried out have been the definition of the marine algae wastes collected from the beach and how have to be the presentation of the algae to be used as a raw material for wet-laid process. As well has been defined the mechanical process to get several length of the algae and the characterization of the different algae wastes length has been carried out. Finally the different algae wastes length has been used as a raw material in the development of wet laid nonwovens to study the behaviour during the processing of the different lengths. This material has been characterized in terms of mechanical, acoustical and thermal properties in order to optimize the non-woven composition.

- **Wet-laid application to obtain nonwovens that act as reinforcement structures in composites**

In this action has been carried out the collection, management and storage of the algae wastes and the cleaning process and preparation of the raw material to develop wet laid nonwovens in order to optimize the wet laid process parameters.

From this information and once the non-woven has been optimized different samples have been obtained by wet-laid technology and will be characterized and used as a reinforcement of the composite material studied.

- **Monitoring of the impact of the project actions**

With the environmental and economic Information obtained from above actions partners are working in:

  - Study of the current procedures of collection, logistic and disposal of the natural wastes materials.
  - Economical study of the collection, logistic and disposal of the natural wastes materials.
  - Economical study of the raw materials.
  - Economical study of the wet-laid nonwoven production
  - Economical study of the cleaning, drying and cutting processes of the algae wastes.

For further information

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