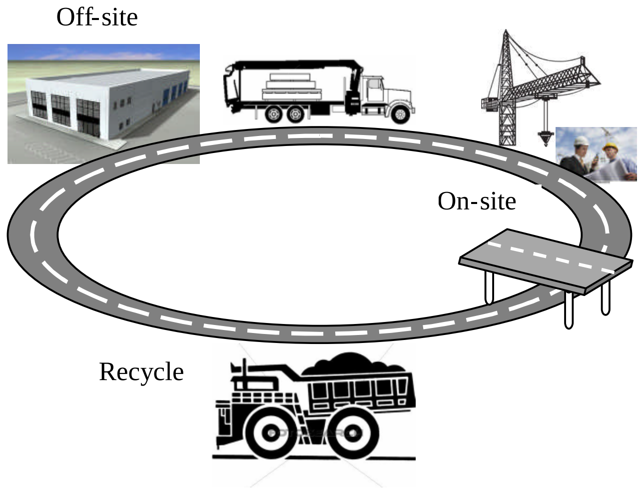
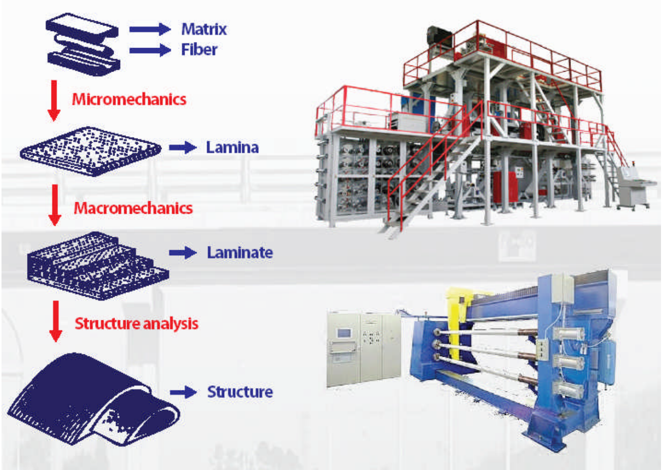



Trans-IND Scope

Polymer based manufactured components for construction applications have very promising results regarding customer requirements, quality, technical and economical feasibility and the **favourable impact** in terms of sustainability, safety and quality of **life**. However, there is a need to industrialise the whole construction process of the Fibre Reinforced Polymers (FRP) components. Further integration of the entire supply and value chain is needed, as well as the development of high technology for design and manufacturing of FRP components, to transform **on-site** construction to **off-site** manufacturing.





Trans-IND Concept

Polymer composites, are commonly used for strengthening existing structures in concrete and steel in civil and building construction. In the last decade there has been a concerted effort to migrate **FRPs** into the construction industry for use in primary load bearing applications. Fibre reinforced polymers (**FRP**) are used more and more in new construction structural components thanks to their advantageous material properties. Potential capacity of these materials is not yet been exploited and non-existence of specific normative for design..

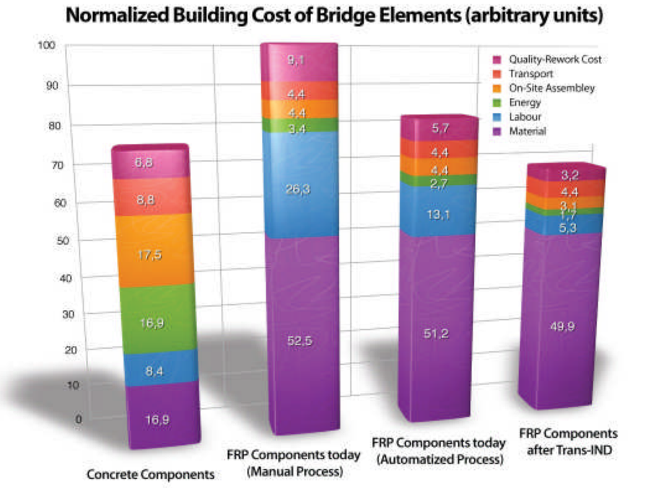
The overall objective of the project is to develop a cost-effective integrated construction process that will enable the maximum capability of industrialisation of components for transport infrastructures using FRPs. It will be demonstrated, as a pilot case, for components of a bridge (beams and preslabs) due to a higher complexity in the bridge components manufacturing and assembly compared to other applications.

Trans-IND Objectives

1. **Definition of TRANS-Ind conceptual model**:
   - Technical, socio-economic, environmental and energy performance indicators.
   - Required technical performance of FRP materials.
   - Definition of the future scenario for transport infrastructures and so on.
2. **Specification of the Trans-IND system covering**: knowledge management, materials, procurement, design of composite transport infrastructure components, off-site manufacturing facilities and processes, logistics, on-site assembly and disassembly.
3. **New conceptual design model of the selected FRP** components and plug-in joint elements based on the industrialisation system.
4. **Conceptual design and development - implementation** of the **off-site** industrialisation process.
5. **Design and development/implementation** of flexible, rapid and reliable **on-site** assembly methods.
6. **To develop a software platform** to provide a holistic approach in the management, design, simulation, visualization and knowledge management of the whole process.
7. **Trans-IND system** (a cost-effective integrated construction process that will enable the maximum capability of industrialisation of composite components for transport infrastructures).
8. **To demonstrate** (in a full size bridge) the flexible industrialisation system through monitoring of the performance indicators and assessment of the results along the whole value chain.

Trans-IND Benefits

- Better products and services for bridges construction and components for transport infrastructures.
- New knowledge and tendencies for the construction sector.
- New ways of collaborating with the large companies of the sector. (SMEs are often suppliers or service providers to these).
- New knowledge generated in the frame of industrialisation of construction processes and Best practices in business process development.
- Research topics. Take-up of innovation.
- Recommendations to standards and prenormative research



INFORMATION

Industrialization through new integrating project
NMP-2008-3.4-2
Starting date: 1st June 2009
Project duration: 4 years
www.trans-ind.eu

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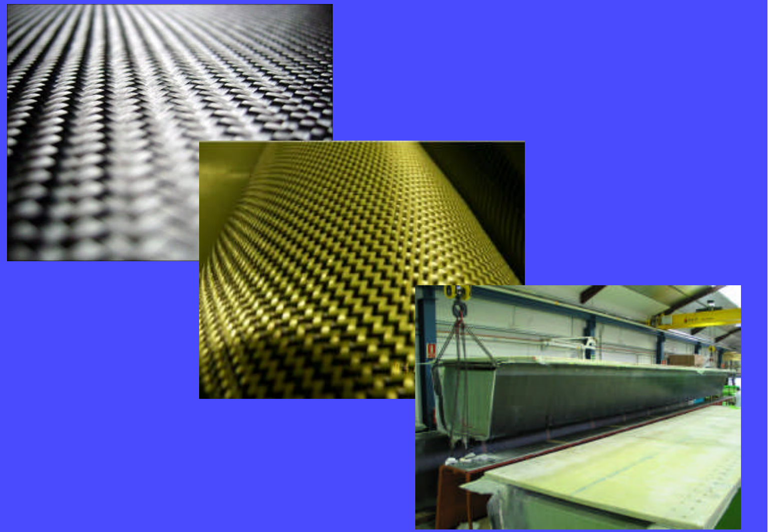

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Trans-IND

New Industrialised Construction Process for transport infrastructures based on polymer composite

SEVENTH FRAMEWORK PROGRAMME

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