



INDUSCOL

STUDYING THE DURABILITY IN THE MARINE ENVIRONMENT OF BONDED MULTI-MATERIAL TIDAL TURBINE STRUCTURES

The objective of the INDUSCOL project is to establish design and maintenance rules for bonded multi-material MRE systems in a harsh environment. This approach relies both on studying the design and durability of MRE bonded structures and also on examining the results of monitoring their condition based on assembly core measurements.

To achieve this objective, different core measuring methods will be evaluated and developed in the first instance. The project will be based on a technological test piece that is representative of multi-material bonding in a MRE system, in terms of particular geometric characteristics, manufacturing method, etc., and in which measuring methods will be inserted.

Deformation within the core of the assembly will be measured from the manufacturing phase through to the test phase in a harsh environment. This stage will enable validation of the appropriate measuring methods for use in tidal turbines.

Secondly, the project will closely examine the degradation of a bonded structure in a harsh environment, particularly at the interface, and will develop adequate models for describing environmental impact on a bonded multi-material structure. The aim is to provide models for designing this type of marine environment structure. This stage will also make the link between the measurements obtained from the core of the bonded assembly and its service life.

Lastly, the final stage will ensure the transferability of the methods developed to industry. This will involve defining the design rules and the protocols for measuring deformation within a multi-material structure, particularly for the certification phases.

Partners

COM_PROJECTS_CATEGORIE_PARTNER_ENTREPRISES

Naval Group, Brest

Research centers

France Energies Marines / ENSTA Bretagne, Brest [\[Project Developer\]](#)
Université de Bretagne Sud, Lorient
Université de Nantes, Nantes

Funders

Agence Nationale de la Recherche
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910 K€

