

CorrosionLABS – Laboratory testing

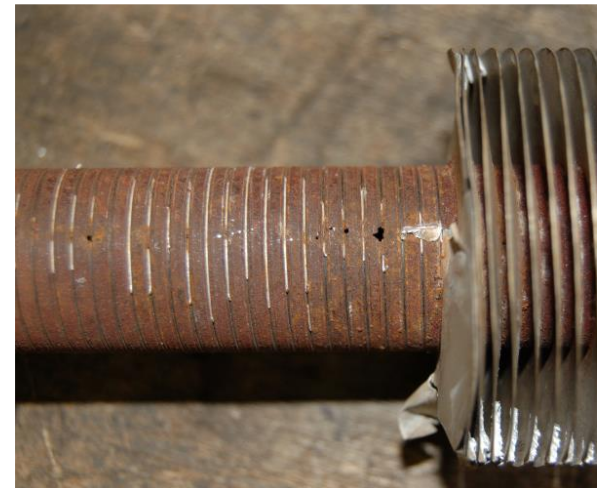
The importance of Applied Research, Testing and Demonstrating Innovations

Het belang van praktijkonderzoek, testen en demonstreren van innovaties

Jeroen Tacq and Joey Bosmans, Sirris

Corrosion LABS

- Large concentration of industry in border region Flanders – Netherlands
- Corrosion is a major problem: safety, environment, production losses, loss of reputation → High Costs
- Tackling corrosion requires:
 - Test facilities, Anchoring of knowledge
 - Increased innovation and cooperation



Corrosion LABS

Goals

- ✓ Platform for industry oriented R&D and testing
- ✓ Realistic test environments to develop and demonstrate Corrosion Management Solutions
- ✓ Improved education



Simulated industrial environment



Laboratory testing



Maritime environment

The importance of Applied Research, Testing and Demonstrating Innovations

- ✓ Stay ahead, but don't take unnecessary financial or safety risks
- ✓ Improved understanding of performance and capabilities of innovations

Innovation project

Simulated industrial environment

- More controlled testing, but still very realistic
- Limited acceleration
- Not standardised



Field Trials

- The real deal
- Slow process
- Difficult to interpret and compare solutions

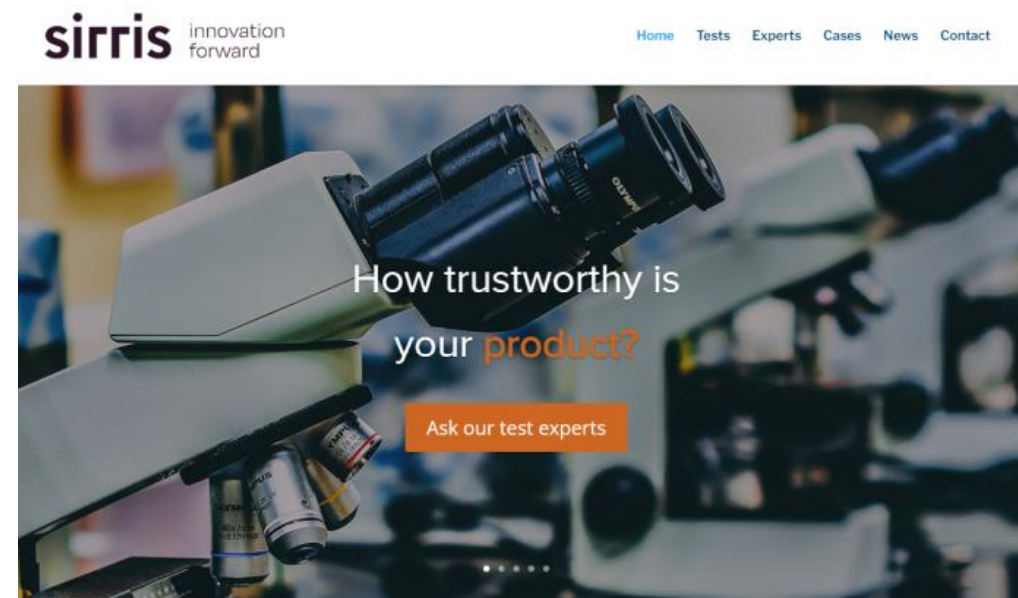


Laboratory testing

- Strongly accelerated
- Compare potential solutions
- Not easy to link to 'real' performance
- Standardised



Laboratory testing @ Sirris



FROM MATERIAL TO FULL-SIZE PRODUCT TESTING



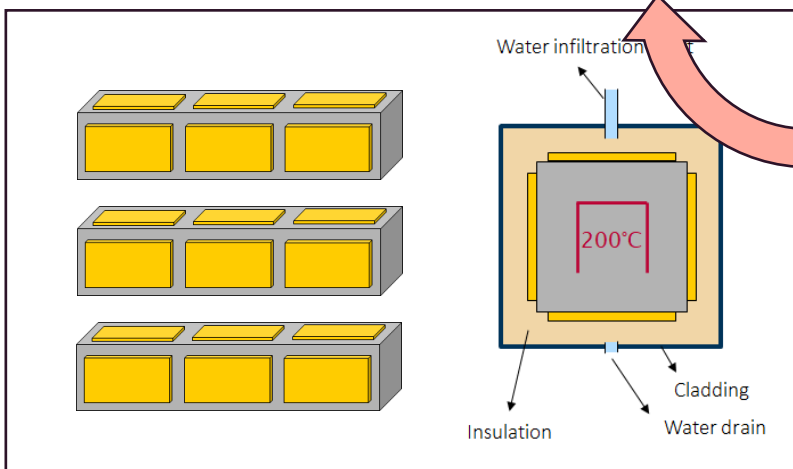
testlabs.sirris.be

CUI JIP - Coatings

Long duration
coating test (1.5 yrs)



Accelerated
coating test



In-field
measurements

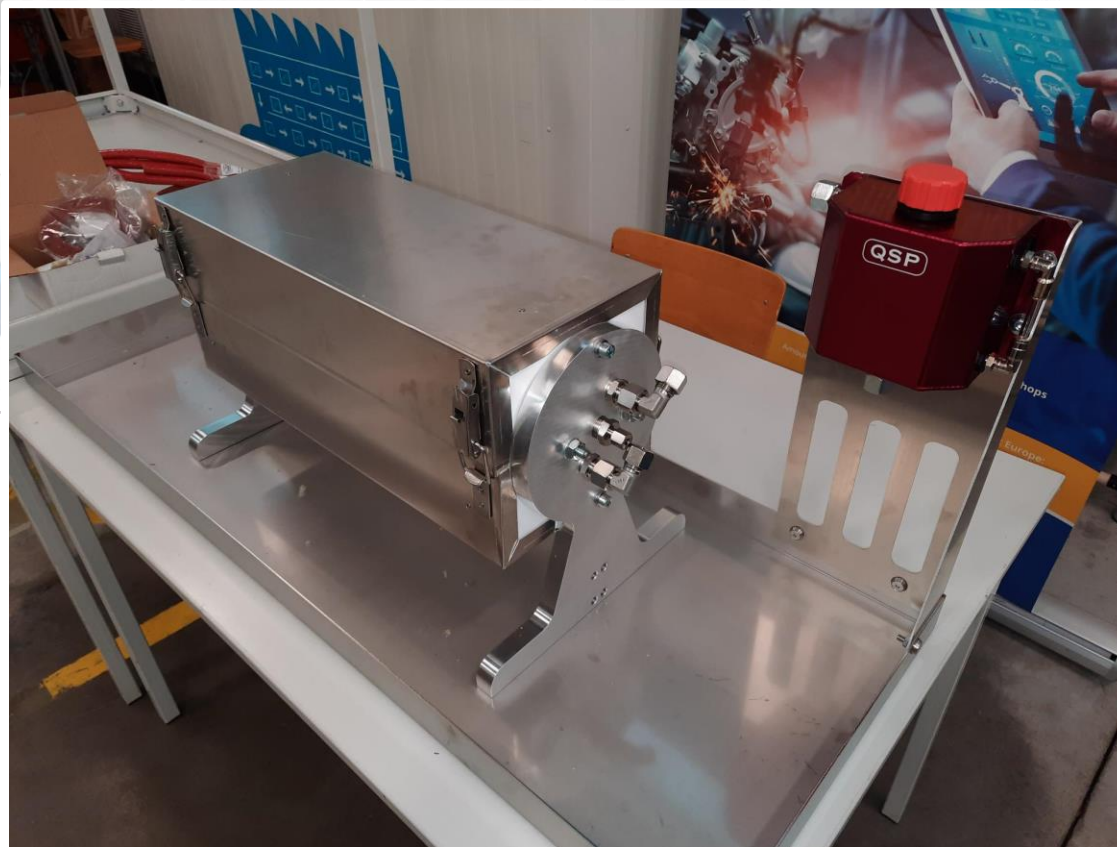


Combined interpretation
to get insights about real-
field performance based
on accelerated testing.

CUI JIP - Coatings

Accelerated
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In-field
measurements

Combined interpretation
to get insights about real-
field performance based
on accelerated testing.

Qualification testing: case Cowboy

COWBOY*



Evaluation of product quality

Evaluation of degradation mechanism and failure models

Comparative testing

GOAL:

- Product control
- Product improvement
- Marketing (quality label)

Qualification testing: case Rockfon



Evaluation of product quality
Different part designs
Different treatments
Swimming pool environment?

GOAL:

- Product control
- Product improvement
- New update EN norm

Failure analysis

Route cause analysis

- Chemical analysis
- Microscopic evaluation

Simulation testing

Mechanical component testing

GOAL:

Understanding failure mechanism

Seek for solutions

Advise on material use, part design, coating,...



Anti-corrosion solutions

- Critical market overview
- Best coating system for the job

GOAL:

Offer independent advise on anti-corrosion coatings



Intake

- Process evaluation
- Coating criteria

Market

- Independent screening
- Information sourcing

Advise

- Application & testing
- Evaluation

Corrosion monitoring and inspection



Data and AI drive a mindset change in Corrosion Management

- Evaluate sensing and inspection techniques.
- Risk monitoring based on data and Artificial intelligence (AI).
- Modelling combining lab data and results from field testing.
- Sirris is a partner in many research projects.



Corrosion @Sirris

SOCORRO project goes for smart management of corrosion

July 6, 2020



In any kind of industry where water meets steel, corrosion is an underestimated threat - and a very expensive one too: corrosion costs for the European region alone amount to 500 billion euro, according to a DNV-GL report. However, there is no generally accepted approach which is followed in the industry to assess the risk of corrosion and use this for smart corrosion management.

It is believed that up to 1/3 of all costs related to corrosion prevention and maintenance can be avoided by a smarter, more efficient system to manage the corrosion problem. Creating such a Smart Corrosion Management system is the goal of the recently started [SOCORRO project](#) in which Sirris is one of the key partners.

Joey Bosmans • You
Engineer Circular Economy Coatings and durability at Sirris
1yr •

[#corrosionprotection](#) [#CorrosieLABS](#) [#Sirris](#) [#interreg](#)
Preventie, detectie en reparatie van corrosie zijn belangrijke onderwerpen die aan bod komen binnen het Interreg programma Praktijklab 'CorrosieLABS' ...see more



Corrosie voorkomen veel goedkoper dan genezen | Maintenance Magazine
maintenance-magazine.be • 1 min read

CORROSION MANAGEMENT


Duurzame oplossingen voor corrosiemanagement


Corrosie is een vaak onderschat probleem in elke sector waarin water in contact komt met metaal, zoals in de maritieme wereld, offshore constructies, havenindustrie, waterzuiveringsstations, staalconstructies.... Onder agressieve omstandigheden krijgen metalen het flink te verduren en kan corrosie optreden. De kosten gelinkt aan corrosie hebben een enorme impact op de economie. In een rapport van DNV-GL wordt de algemene kosten die kunnen worden toegewezen aan corrosie geschat op 3,8 procent van het Europese BBP, of ruwweg 500 miljard euro. Omdat tot een derde van corrosie-gerelateerde kosten zou kunnen vermeden worden, speelt het uitrollen van innovaties in corrosiemanagement een cruciale rol. Sirris adviseert hierbij bedrijven zowel rond preventie als monitoring van corrosie. Enkel door te beschikken over de juiste informatie kunnen goede beslissingen genomen worden, zowel op een technisch als managementniveau. Een aangepast ontwerp, juiste selectie van materialen en coatings, en een door data gevoed risico-gebaseerd inspectiesysteem kunnen bedrijven heel wat geld besparen.

Sirris is betrokken in verschillende initiatieven en onderzoeksprojecten rond deze topics.

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RELATED CASE



Parkwind berekent impact van corrosie op de restlevensduur van windturbines

Webinar - 'Corrosion of 3D printed components'



Is your company using 3D-printed components or do you want to start using them? This webinar will inform you about the specific corrosion issues that can occur with 3D-printed components. The possibility to participate in a collective research project on this issue will be presented.

When: Wed, 27/01/2021 - 11:00 to 12:00

Where: [\[map\]](#)
online

Price: Participation in this webinar is free, but registration is mandatory.

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sirris innovation
forward