

Our **modular approach** provides you with the detailed information, analysis and advice needed for your specific requirements.

Failure analysis

with documentation, report and recommendations for follow-up steps

Implementation

of standardized and/or customer-specific tests

Consulting

on material selection or surface protection with verification of the developed solution

Complete package:

Testing, consulting as well as development of innovative solutions, specifically to your requirements

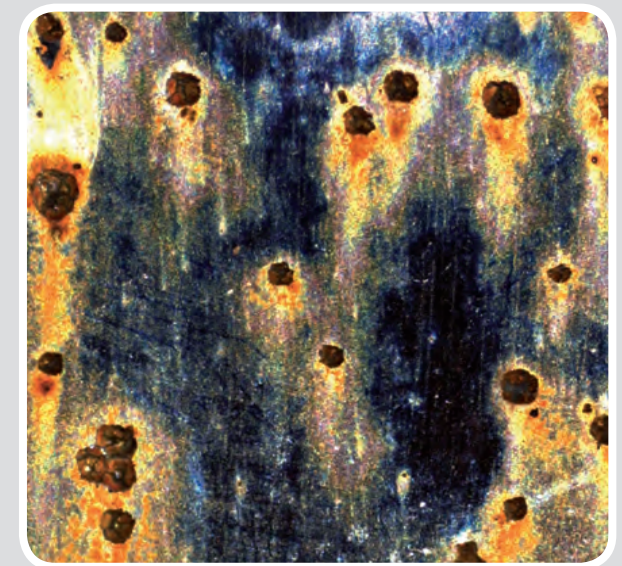
Our strengths for your success

- Personal contact partner before, during and after project implementation
- Analyses, tests and material expertise from a single source
- Interdisciplinary competences in materials science, chemistry and mechanical engineering
- Recommended action, custom created to your requirements



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Recognise – Understand – Prevent
Your specialists on the subject of materials, surfaces and corrosion

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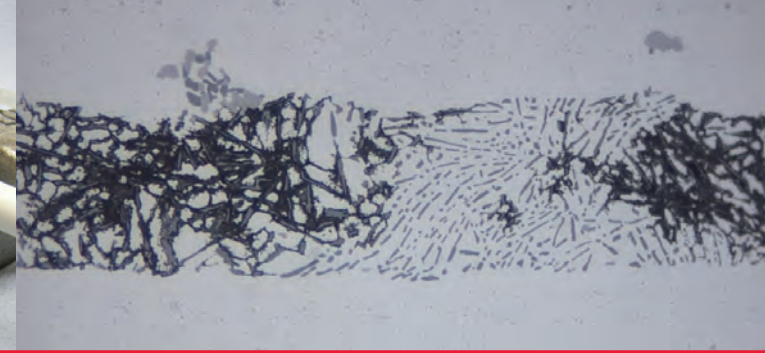
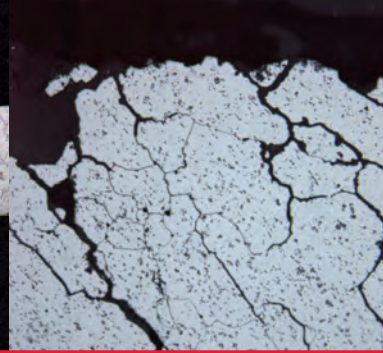
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Recognise – Corrosion causes annual damage of approx. 3-4% of GDP

By inclusion of existing know-how, these costs can be largely avoided. A layperson tends to see red rust as corrosion. However, this is only one of many manifestations. Other forms of corrosion are for example:

- **Pitting corrosion**
- **Galvanic corrosion**
- **Selective corrosion**
- **Intergranular corrosion**
- **Stress corrosion cracking**
- **Hot gas corrosion**
- **Microbial-induced corrosion**
- **Hydrogen-induced damage**

As different as the manifestations of corrosion may be, so are the respective triggers. A substantiated understanding of the reasons and interactions can contribute to the active avoidance of additional costs caused by corrosion

Understand – Determining causes and simulating corrosion

Whether you need failure analysis, material analysis or testing to optimize the corrosion requirements, we can help. We use the following investigation methods for this purpose:

- **Metallography und analysis**
 - Microscopy, microstructure analysis, SEM with EDX
 - Mechanical testing such as microhardness and tensile testing
 - Testing for hydrogen embrittlement
- **Electrochemical potential analysis (DIN 50918) or impedance spectroscopy (DIN EN ISO 16773-1 to 4)**
 - Corrosion behaviour of metallic components and their coatings
 - Risk of galvanic corrosion between metallic components/ coatings/ electrically conductive plastics /CFRP
 - Media resistance of different materials
 - Corrosion resistance of metals and metallic coatings in soils, as well as in earth improvement materials according to EN IEC 62561-7
 - Coating quality and degradation resistance
 - Contact resistance in electrical contacts
- **Classical corrosion tests** such as
 - Salt spray test according to DIN EN ISO 9227
 - Stress corrosion cracking test according to DIN EN ISO 7539-1
 - Test on IC according to DIN EN ISO 3561-1 to -3, ASTM A262-14 and further tests, go to www.inncoa.de
- **Required- and customer-specific corrosion tests** such as
 - Exposure to liquids or gases
 - Soil exposure, severe outdoor weathering, alternating (immersion) tests

Prevent – Reduce costs with suitable material selection and development

With our long-term experience and comprehensive knowledge in the fields of materials, surfaces, diffusion and corrosion protection, we support you in reducing costs due to corrosion and its consequences. Our experts offer professional support in the selection and development of economical solutions.

- **Expert reports**
 - Corrosiveness of the environment
 - Damage expertise
 - Remedial concepts
- **Material selection based on corrosion requirements**
- **Comprehensive consultation** with creation of requirements profile, benchmarking, contract development and testing of innovative solutions
- **Training and workshops** on corrosion
- **Combination of economics and science** by participation in expert committees, partnerships with universities and research institutes
- **Everything from one source:** Testing, consulting and development of innovative solutions