



## VALUE RETENTION VIA CORROSION PROTECTION – INSPECTION | CONSULTANCY

**Fraunhofer Institute for  
Manufacturing Technology  
and Advanced Materials IFAM  
– Adhesive Bonding Technology  
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Components made of metallic materials corrode due to environmental influences and are also often exposed to corrosive media. Preventing corrosion and its consequences is a key issue in most industries because the cost of corrosion, in Germany alone, amounts to billions of euros. It is estimated that each year the direct cost of corrosion in industrial nations amounts to approximately three to four percent of their gross domestic product (GDP).

Poor corrosion protection results in

- ➔ a foreshortened service life or premature failure of a component or structure
- ➔ costly repairs to coating systems
- ➔ high environmental stress – depending on the type of coating system

The development of effective protective coatings and well-planned protection concepts helps to prevent wear and to reduce unnecessary costs and retain existing value.

### Corrosion protection expertise

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM in Bremen has an in-depth knowledge and practical experience of corrosion protection systems – in particular for the chemical industry, shipbuilding sector, steel structures, and offshore wind turbines. This know-how is also very relevant for a host of other applications. This covers not only technical knowledge about different types of corrosion and corrosion phenomena but also the application of suitable protective measures.



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These corrosion protection measures – such as the use of coatings or coating systems, the use of suitable steels, surface pre-treatments, and other technologies – serve to protect components and structures from the effects of corrosion. Very high requirements are put on corrosion protection measures. Fraunhofer IFAM specialists provide customers with comprehensive advice and offer support with technical services and application-related R&D activities. The contact persons have been certified by FROSIO and DIN CERTCO and their expertise is nationally and internationally recognized.

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### Range of services offered by Fraunhofer IFAM

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- Expert appraisal and consultancy
- Inspection and evaluation of coatings and coating processes
- Analysis of corrosion damage and corrosion phenomena
- Corrosion and paint/lacquer test laboratory accredited in accordance with DIN EN ISO 17025
- Advice about maintenance and corrosion prevention strategies
- Development of concepts for corrosion protection
- Application-specific selection of commercially available coating systems
- Development of alternative corrosion protection systems and special application methods
- Development, modification, and characterization of raw materials and components for coating systems
- Development of surface preparation/pre-treatment procedures
- Customer-specific training of employees and technology transfer services in the area of corrosion protection

- 1 *Inspection of corrosion damage on parts of commercial vehicles.*
- 2 *Inspection of a tank on a container ship: damage to the coating resulted in blistering.*
- 3 *Offshore testing of corrosion protection coatings developed by Fraunhofer IFAM for wind turbines.*