



**1** *Reconstruction of the layer structure for the repair of a glass fiber composite – skills learned in the FRP-Remanufacturer training course at the Fraunhofer IFAM.*

## FIBER REINFORCED PLASTIC REMANUFACTURER (FRP-REMANUFACTURER)

**Fraunhofer Institute for  
Manufacturing Technology  
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– Adhesive Bonding Technology  
and Surfaces –**

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### Objectives of the training course

The participants will be trained to repair fiber composites and to work in industrial production. The training course qualifies participants how to effectively follow work instructions for their particular work tasks. After successful completion of the course they are able to process and repair high-quality fiber composite structures.

### Duration of the training course and examination

The training course including the examination amounts to a total of 40 hours (one week). To aid the learning, the theoretical part is backed up by a large number of practical assignments. The course ends with a final oral and practical examination. A prerequisite for taking the examination is regular attendance at the course sessions.

### Target groups and preconditions for participation

The course is aimed at employees in companies whose work involves independently maintaining, repairing, and processing fiber composites following work instructions. Participants must have an adequate knowledge of the course language to enable them to understand the course material and take the examination.



## COURSE CONTENT

### Fundamentals

The course starts by covering the fundamentals of fiber composite materials. Participants learn about the special features of these materials and understand what must be particularly heeded when repairing/maintaining fiber composites.

### Materials

This section of the course provides participants with information about the various components (fibers, matrix materials, core materials, fillers) these fiber composites consists of and which are used when carrying out repairs as well as their effects on the subsequent component properties.

### Repair methods

Effective repair is a prerequisite for subsequently using the repaired components. The participants are introduced to the principles of repair techniques. Besides the necessary preliminary work, various strategies for repairing fiber composite components are introduced and practical assignments are carried out. In addition, the detection and prevention of errors and defects are discussed.

### Quality assurance

This section of the training course introduces the quality assurance measures that are required when repairing fiber composite materials. This covers the professional storage and processing of raw materials, appropriate surface treatment methods, and the realization of high-quality repairs.

### Work safety and environmental protection

This section discusses the safety measures to be taken when working with fibers and plastics and with the auxiliary materials which are used in repair as well as in manufacturing processes. The proper use of work equipment and protective equipment is also covered.

### Certification and accreditation

| The Division of Adhesive Bonding Technology and Surfaces is accredited according with DIN EN ISO 9001, and the laboratories for material testing, corrosion testing, and paint/lacquer technology are further accredited in accordance with DIN EN ISO/IEC 17025.