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1 *Saw blade with bonded on cutting segments for cutting granite.*

EWF-EUROPEAN ADHESIVE SPECIALIST (EAS)

Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM - Adhesive Bonding Technology and Surfaces -
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Successful completion of this training course enables participants to take on supervisory functions, prepare work instructions, and make a contribution to quality assurance aspects of bonding technology. They will be able to plan, organize, and supervise bonding processes and to monitor and if necessary vary process parameters.

COURSE CONTENT

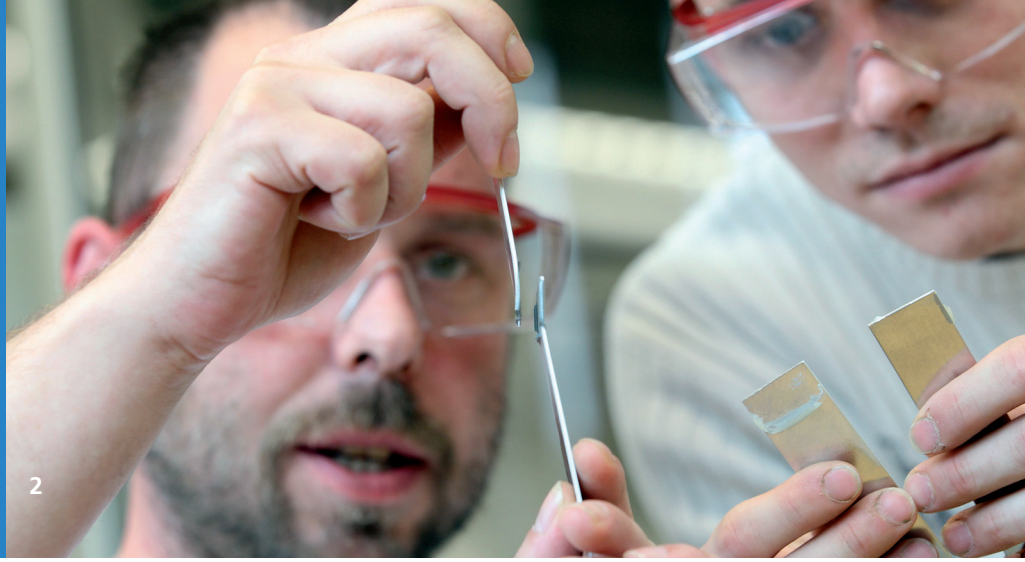
Fundamentals

The course starts by introducing fundamental aspects of adhesive bonding. The advantages and limitations of adhesive bonding technology will be covered and a comparison will be made with other joining techniques. Participants will acquire a fundamental understanding of bonding mechanisms and the properties of adhesives. The key importance of wetting for the adhesive bonding process and how this can be influenced by various parameters will be highlighted.

Adhesives

In the German market alone there are thousands of different adhesive products. The range of products extends from elastic-soft polyurethanes right through to high-strength epoxy resins.

The participants are familiarized with the most important types of adhesives and their properties. Aspects relating to the processing of adhesives, accompanied by practical exercises using different types of adhesives, form a key part of the first week of the course.



Substrates

The course provides participants with knowledge about the structures of different substrate materials and their behavior when subjected to mechanical forces and environmental influences. This helps the participants to estimate deformation and property changes in adhesive layers, and so understand the resulting requirements on material-specific surface treatments.

Surface treatment

The importance of the surface condition of the substrates used for the bonding process is a further topic covered in the course. Participants will gain theoretical and practical knowledge of the most important methods of surface treatment for a variety of different materials. These include efficient cleaning of the component surfaces, various surface pre-treatment methods, and the use of primers.

Properties of the adhesive layer

In order to assess the suitability of an adhesive for a particular application, it is necessary to appraise the deformation behavior under the relevant conditions. Fillers or absorbed moisture can affect the deformation behavior just as significantly as temperature and the adhesive layer thickness.

Test methods

The quality of an adhesive bonded joint concerns far more than merely strength after curing. Other factors that are just as important are reproducibility and long-term stability. The need to use destructive test methods to determine the quality of joints is demonstrated using specimens which the participants will make during the course. The limitations regarding the transferability of results from standardized tests to real components will become clear.

Work safety and environmental protection

„Ignorance" is a main cause of accidents at work. The correct handling of adhesive systems hence requires a sound fundamental knowledge of the specific hazards associated with the adhesives and the auxiliary materials being used.

Certification and accreditation

- The Department 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.
- The Center for Adhesive Bonding Technology has an international reputation for its training courses in adhesive bonding technology and is accredited via DVS-PersZert® in accordance with DIN EN ISO/IEC 17024.

2 *Participants examine and discuss fracture patterns.*