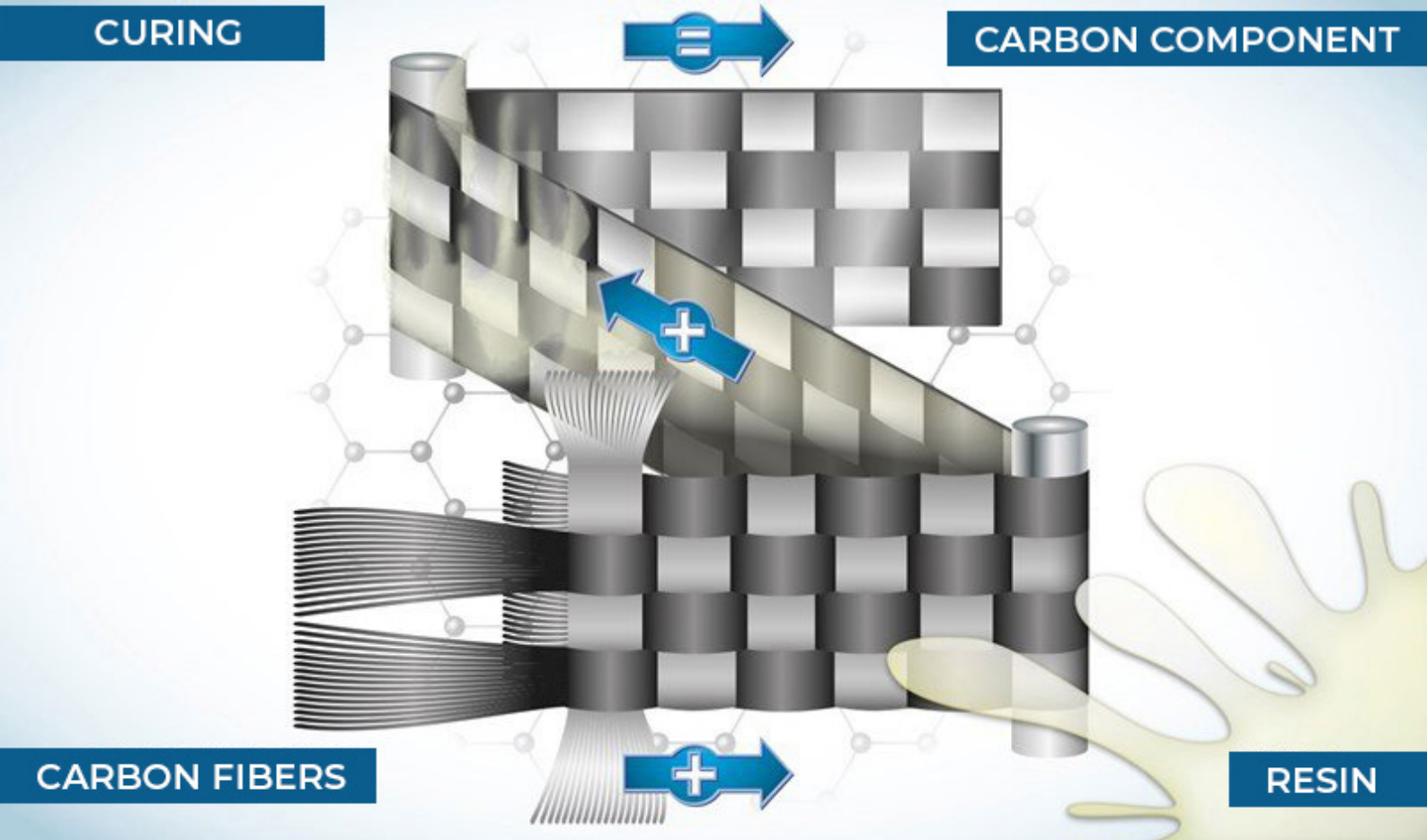


# WHAT IS CARBON, ACTUALLY?



Carbon is a fiber composite material. A fiber composite material is produced by combining two components to create a completely new material. This has better properties than the individual components themselves due to the interaction of the two components. Generally, reinforcing fibers are embedded in a plastic matrix (e.g. epoxy or polyester resin) during production. For example, carbon (CFRP is produced) or glass (GFRP is produced) are used as the fiber material for this purpose.

The two components perform different tasks. The comparatively soft matrix surrounds the fibers, supporting and fixing them in place. It ensures both the load is transmitted to the fibers and the load is dispersed between the fibers. It also protects the sensitive fibers from damaging environmental influences. The fibers give

the composite its outstanding mechanical properties. Among other things, they ensure high strength as well as stiffness and prevent the material from fatiguing even under frequent stress. By specifically aligning the fibers in the component, the properties can be adapted to the individual load case.

With the new material thus created, much lighter components can be produced than with steel and even aluminum or titanium. Even complexly designed and very large parts can be produced in a single operation with relatively little effort. The areas of application for fiber composites are diverse. Among other things, they are used in aerospace, automotive industry, energy technology, and sports and leisure.

# WHAT OPPORTUNITIES DOES THE INDUSTRY OFFER?

## VOCATIONAL TRAINING

In the field of technical vocational training, there are many different ways to become professionally involved with fiber composite material in Germany. For example, the recognized dual training occupation of „Process mechanic for plastics and rubber technology - specializing in fiber composite technology“ can be learned.

The training period is generally three years and takes place both in the company and at vocational school. There are other occupations related to fiber composite technology, such as aircraft mechanic, light aircraft builder, laminator, plastics presser, boat builder.

## FURTHER EDUCATION OPPORTUNITIES

In addition to attractive vocational training, the fiber composite industry also offers exciting opportunities for further training. For example, a technical apprenticeship can be followed by further training to become a state-certified technician in plastics and fiber composite technology. This can be completed either full-time or part-time and ends with a state examination. Successful completion of the course also gives students the opportunity to obtain a specialized

university entrance qualification. Following vocational training, it is also possible to complete further training to become a certified industrial foreman in fiber composite technology. In Germany, this advanced training is regulated uniformly and after successfully passing the IHK examination, the participants receive a master craftsman's certificate.

## STUDYING OPPORTUNITIES

It is also possible to take up studies in the subject area of fiber composites. Various bachelor's and master's degree programs with a sub-field or focus on fiber composites are offered at many universities and colleges.