

Vacuum infusion is a manufacturing process for fiber composite components in which dry fibers, such as carbon or glass fibers, are first placed in a mold. The structure is then sealed airtight with a vacuum film and evacuated. The vacuum generated creates a pressure difference between the atmospheric pressure on the resin side and the lower pressure in the fiber structure. As a result, the resin is forced into the dry fiber structure by the atmospheric pressure and saturates the fibers.

DD Composite GmbH, based in Bad Liebenwerda, Brandenburg, is active in the field of fiber composite technology and offers materials and accessories for the production of CFRP and GRP components in the vacuum infusion process.

The range includes infusion resins and hardeners, carbon and glass fibre fabrics as well as multiaxial scrims. The range is supplemented by various vacuum auxiliary materials and consumables for vacuum infusion. These include, for example, sealing tapes, infusion nets and flow aids, peel-ply or tear-off fabrics, vacuum hoses, vacuum films and resin trap systems.

The products are used in the production and processing of fibre composites such as CFRP (carbon fibre reinforced plastic) and GRP (glass fibre reinforced plastic). The range thus covers different requirements relating to the construction and implementation of vacuum infusion processes.

In addition to providing the required materials, DD Composite GmbH offers technical advice and support in the planning and implementation of vacuum infusion processes. Companies and users thus receive suitable materials and vacuum accessories as well as support in the practical implementation of fiber composite projects.

Whether companies, commercial users or private individuals who want to produce their own carbon and GRP components, DD Composite GmbH offers support in the selection of the right materials and in the implementation of vacuum infusion processes. From the selection of resin, fabric, non-crimp fabrics to vacuum auxiliary materials, customers receive technical assistance and practical advice.



Material list (with link to the product)

- the mold (instructions for molding can be found [here](#))
- [Fibre fabrics](#) (glass fabric, carbon fabric, aramid fabric)
- [Resin and hardener](#)
- [Spray Adhesive](#)
- [Vacuum film](#), [release film](#), [perforated film](#)
- [Vacuum sealing tape](#)
- [Flow aid/vent net](#)



- [Release agents](#)
- [Tear-off fabric](#)
- [Resin Distributors \(Spiral Hoses\)](#)
- Resin trap
- Vacuum pump
- [Hoses](#) and [connectors](#)

Vacuum infusion step-by-step instructions

1. Mold preparation

- Clean the mold thoroughly.
- Apply release agent or release wax and then polish.
- Check the surface for cleanliness and damage.

2. Insert fibre layers

- Place the fibre layers in the mould in a dry place according to the intended layer structure.
- If necessary, fix the individual layers with suitable spray adhesive.
- Make sure that the fibers are wrinkle-free and correctly positioned.

3. Apply auxiliary materials

- Lay tear-off fabric over the fibre layers.
- Place the separating foil or perforated foil on top.
- Distribute the flow aid/vent net evenly.
- Position the resin channel and vacuum line, e.g. spiral hose.
- Prepare vacuum sealing tape or leave protective strips on the sealing tape for the time being.

4. Sealing vacuum structure

- Place vacuum foil over the entire structure.
- Apply vacuum sealing tape to the designated locations.
- Remove the protective strip of the sealing tape and press the vacuum film carefully.
- Make sure that there are no leaks.
- Be need to attach the folds of the vacuum foil in the right places.

5. Perform vacuum test

- Connect the vacuum pump.
- Switch the resin trap into the vacuum line between the component and the vacuum pump.
- Build up a vacuum.
- Check the system for leaks.
- Look for any leaks and seal them carefully.

6. Prepare resin

- Weigh the resin and hardener according to the prescribed mixing ratio.
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- Mix components thoroughly and with as few bubbles as possible.
- Pay attention to the processing time of the resin system.

7. Perform resin infusion

- Open resin feeder.
- Observe and control the flow front.
- Control the resin flow.

8. Infusion beenden

- After the fibre layers have been completely soaked, close the resin supply.
- Maintain a vacuum.
- Leave the component under vacuum during the intended curing time.

9. Curing and demoulding

- Allow the component to cure according to the specifications of the resin system.
- After sufficient curing, remove vacuum build-up.
- Remove vacuum film, flow aid, tear-off fabric and other auxiliary materials.
- Remove the component from the mold.

10. Tempering – if required according to specifications

- Depending on the resin system and production specifications, temper the component in the mold or after demolding.
- Maintain the temperature and duration according to the prescribed tempering cycle.
- Make sure that the heating is controlled and even.

Tips and error prevention

- If possible, use low-viscosity resin, e.g. the epoxy resin 200G mentioned above, if suitable.
- A processing temperature of around 25–35 °C can improve the resin flow; be sure to observe the permissible processing temperature and processing time of the respective resin system.
- Do not perform the infusion unnecessarily quickly.
- Make sure that the flow aid is evenly distributed.
- Avoid micro-leaks, as air penetration can lead to pores and defects in the component.
- Always perform a careful vacuum leak test before starting the infusion.

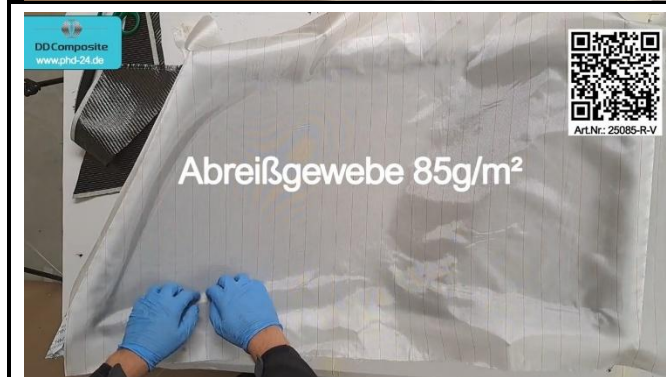
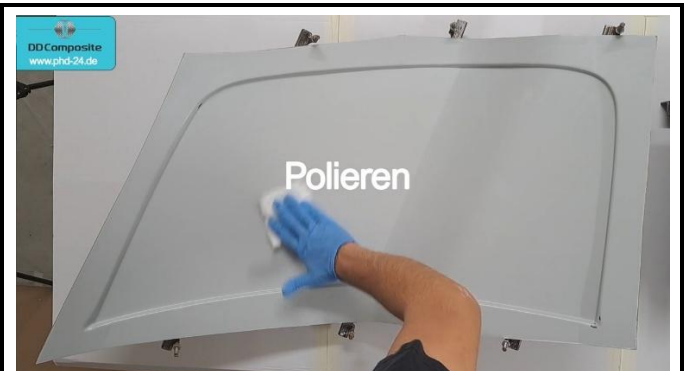
Conclusion

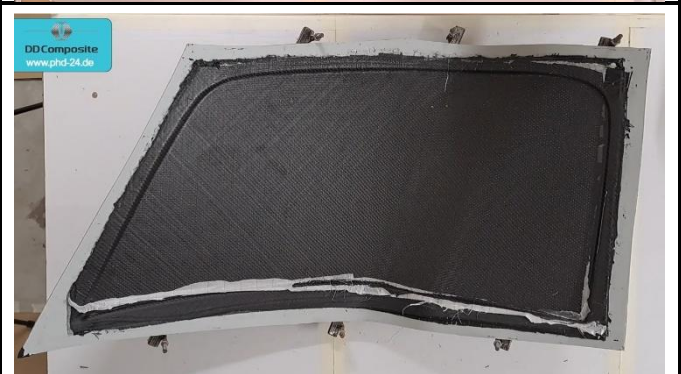
Vacuum infusion enables high-quality, lightweight and stable components. With careful preparation and control of the process, reproducible Achieve results.

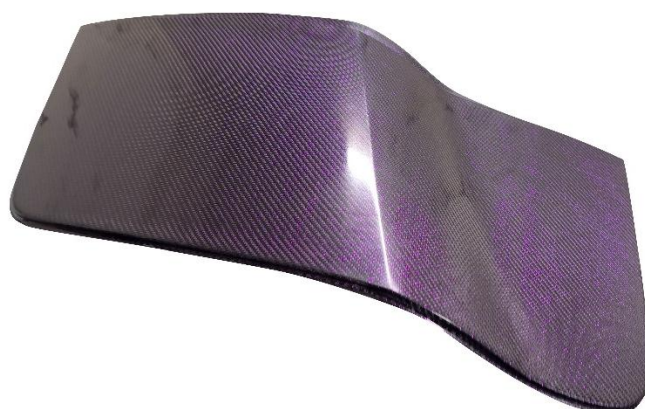
[Vacuum Infusion - Resin Injection Process Materials in the online shop | PHD-24.de](#)

Video example Audi R8 Sidblades (Link): [Video instructions | PHD-24.de](#)

Instructions in pictures:







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