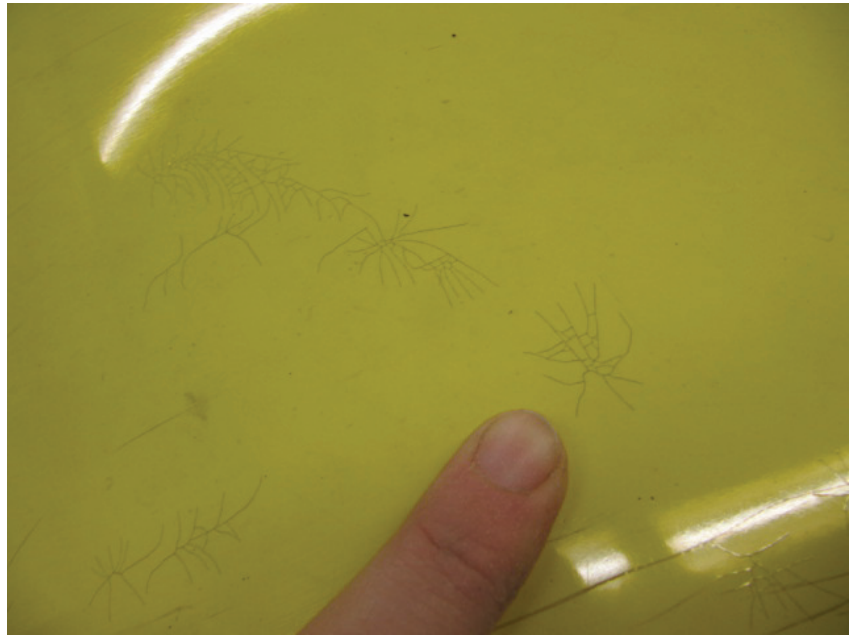
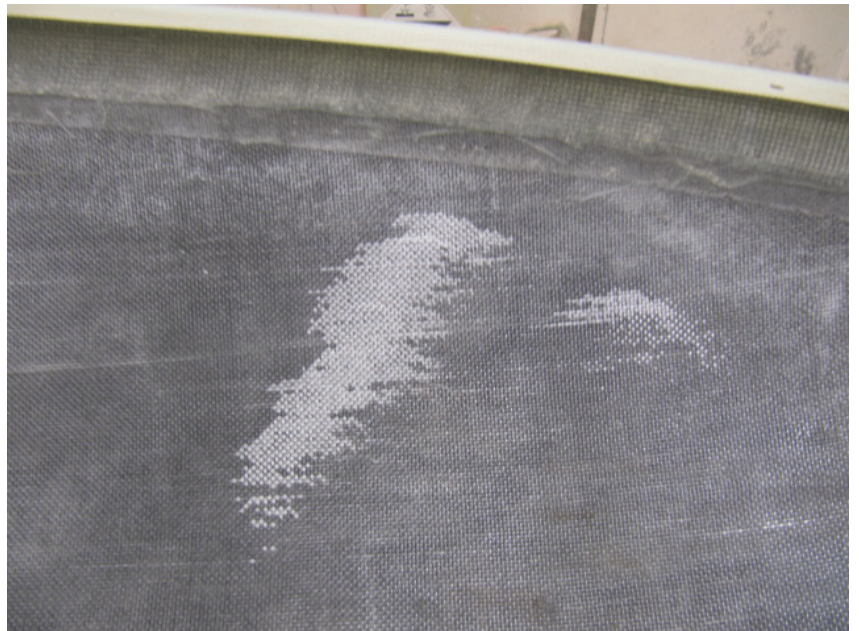


Repairing cracks in the body of your velomobile

These small cracks in the form of a star are not only in the outside layer – the gelcoat – but also inside in the glass/carbon fiber laminate.



Behind the cracks visible in the gelcoat there are also cracks in the laminate! Glassfibre becomes white. But in the carbonfibre you can hardly see them.



Deeper damage in the body of your velomobile looks like this:



from outside



from inside

Repairing cracks in the body of your velomobile

Laminating Tools and Supplies:

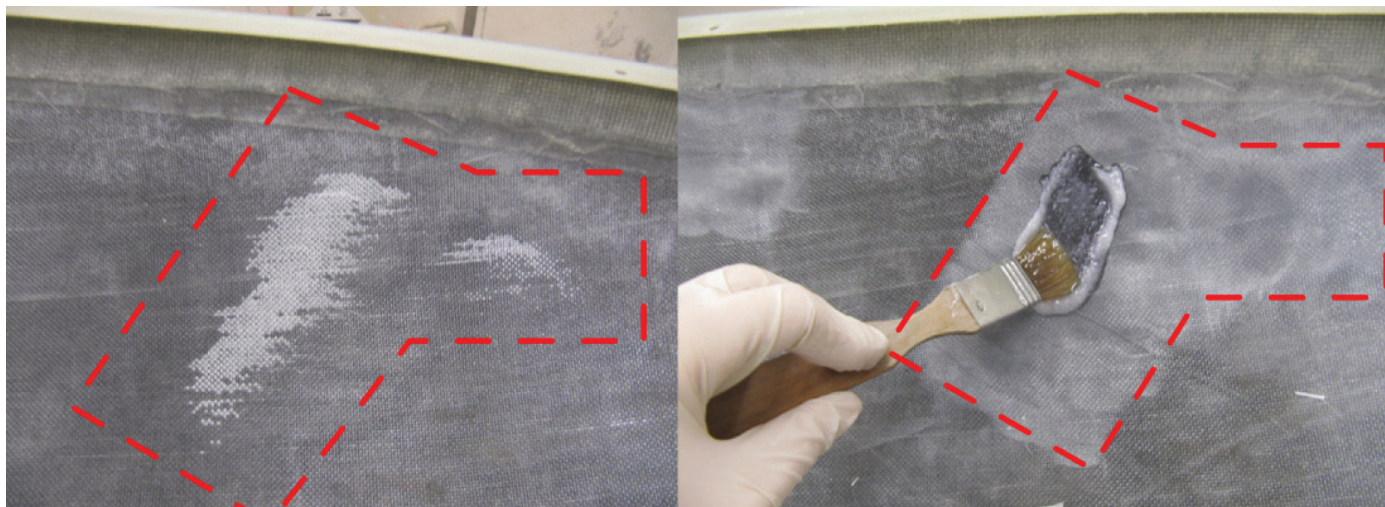


- epoxy resin
- filler – milled glass fiber 0,2 mm with cotton flocks
- glass or carbon fiber fabric
- acetone
- brush
- peel-ply
- mixing cups
- mixing sticks
- latex disposable gloves
- paper towel (handy)
- sandpaper – roughness 80
- protective paper mask
- scissors
- scale 1 g accuracy



Small set of epoxy, filler, glass or carbon fiber fabric and peel-ply you can be purchased at Velomobile.nl.

The laminating process must take place in a room at 20 to 25 degrees C, curing must take place at the same temperature for at least 24 hours.

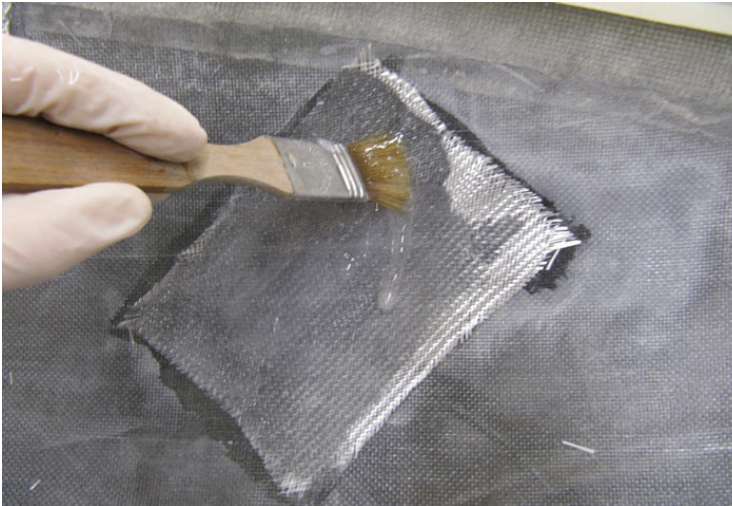
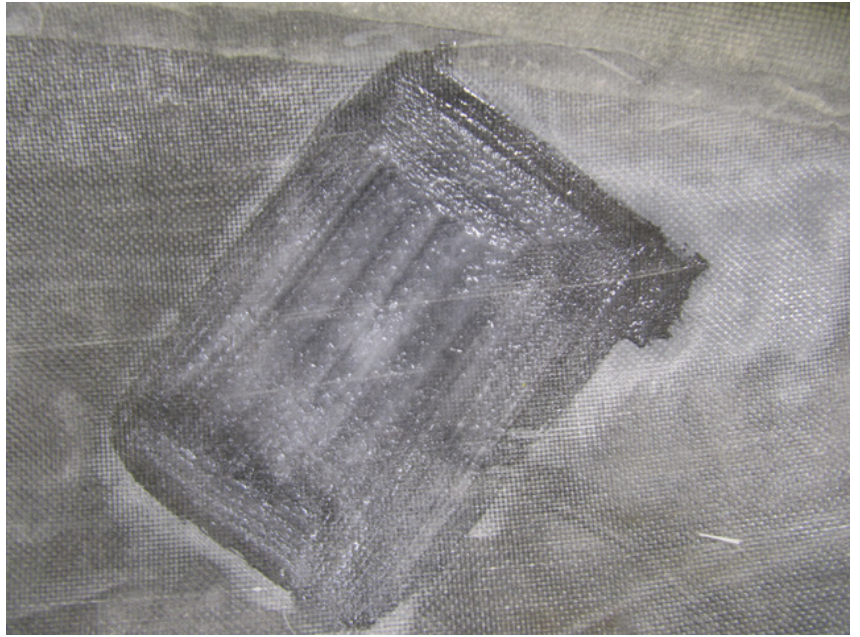


1. Sand the area where the damage is thoroughly and about 3-5 cm extra around (see the dashed line in the picture). Remove the dust with vacuum cleaner.

2. When working with epoxy wear gloves, some people can develop an epoxy allergy. Mix the resin according to the instruction written on the package. Make sure you manage the proper ratio of resin and hardener with 1 g accuracy. For such a small area you will need maximal 30 g of the epoxy mixture.

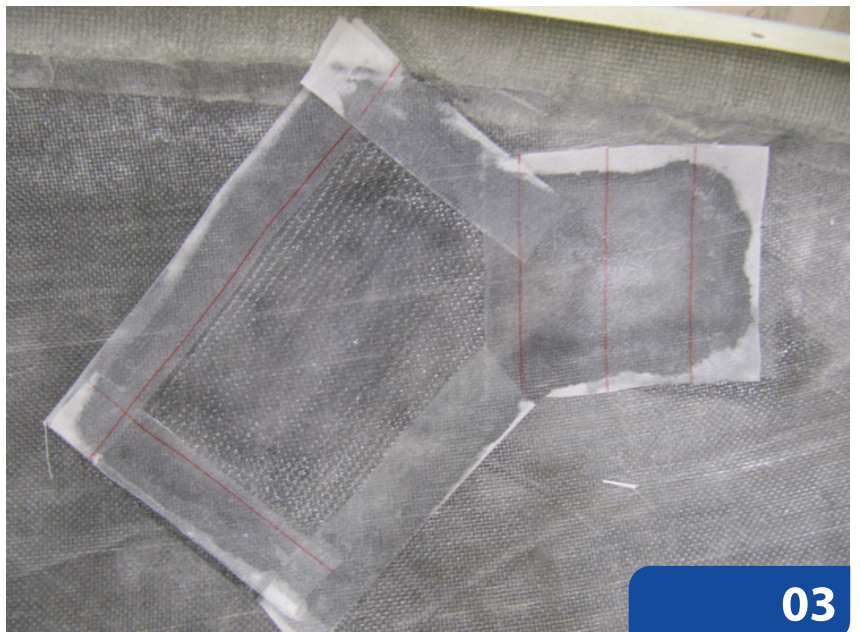
Repairing cracks in the body of your velomobile

3. Place 1/3 of the mixture in another cup and add the filler (glass chops with cotton flakes). This thick mixture should be easy to smear with a brush. Apply it on the sanded area.



4. Laminate the sanded area with glass fiber fabric. Wet it with the epoxy – the fabric becomes transparent (no white spots). In the area where the star shape cracks are one layer of ca 350 g/m² glass fiber fabric is sufficient.

5. If the laminated area is in a place in your velomobile where you can easily get with your hands laminate peel-ply fabric over the edges. This will avoid sharp edges and make smooth finish. After the resin is cured you can remove the peel-ply.



Repairing cracks in the body of your velomobile

Is the damage in the body of your velomobile deeper? Laminate 2 or 3 layers of glass fiber over each other. Start with the smallest piece and at last apply the largest square over whole sanded area.

Examples:

Damage is 5x5 cm large.

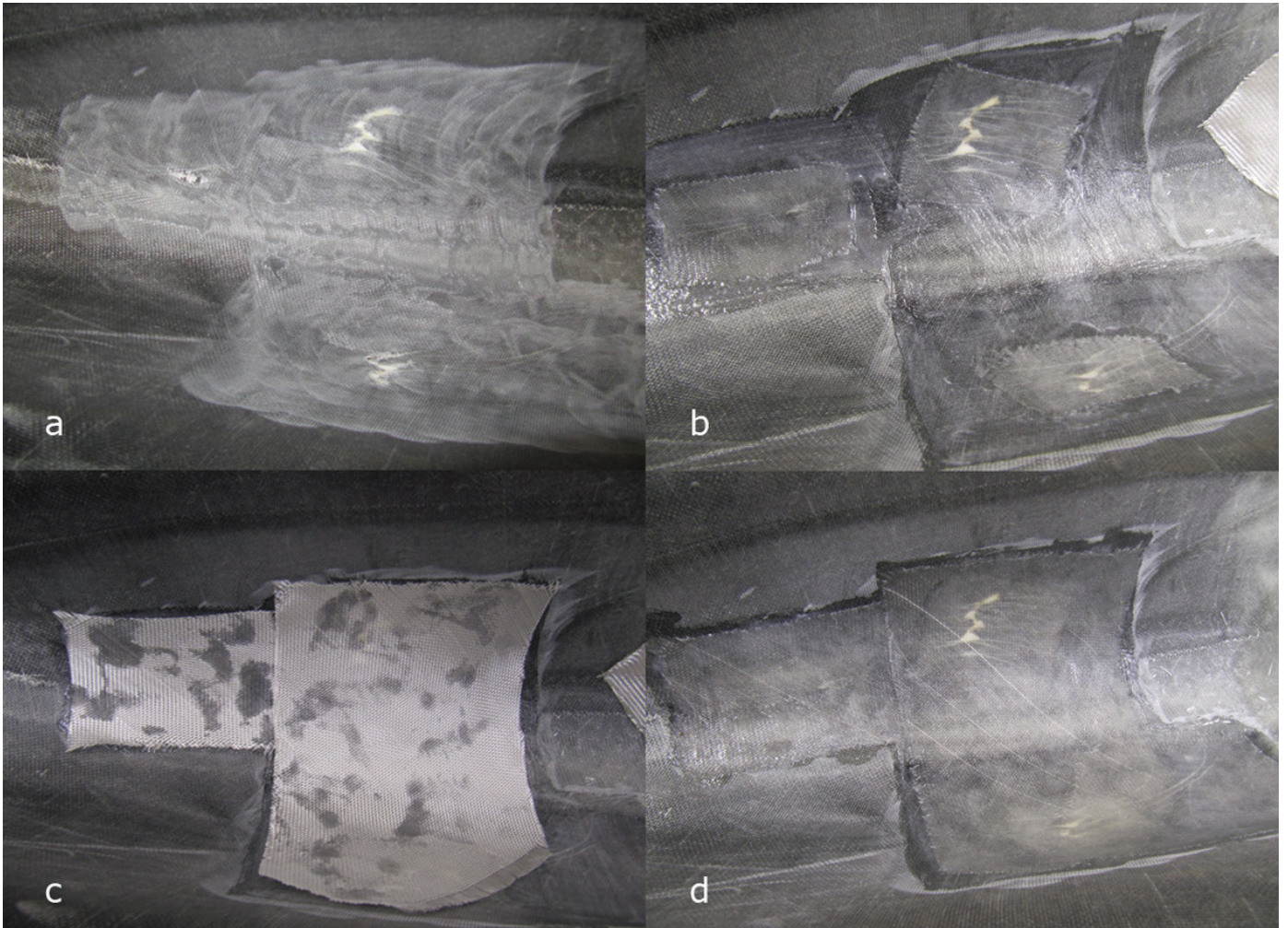
Laminating with 350 g/m² glass fiber – make 2 squares. The smaller is 7x7 cm and larger 10x10 cm.

Laminating with 200 g/m² glass fiber – make 3 squares. 1st is 7x7 cm, 2nd is 9x9 cm and the 3rd is 11x11 cm.

Laminating with 200 g/m² carbon fiber – make 2 squares. The smaller is 8x8 cm and the larger is 12x12 cm.

Carbon needs more overlap to get its original strength.

To avoid sharp edges in your body, laminate peel-ply over the edges. And remove it after the resin is cured.



Will you work for several days?

Put your brush in a well closed jar with acetone.

Clean and dry the brush with a paper towel before you use it again.

